Washington State

Northern Columbia Basin Railroad Project Feasibility Study

Washington State Department of Transportation

February 2006

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Prepared for the

Washington State Department of Transportation

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Prepared by the Public Transportation and Rail Division
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Table of Contents

Appendices:

List of Exhibits

Executive Summary

The Port of Moses Lake and other local stakeholders have proposed a set of railroad improvements in the Moses Lake area. These projects, collectively known as the *Northern Columbia Basin Railroad Project*, are intended to make the Moses Lake area more attractive to heavy industries that use rail transportation, and ultimately promote economic development in the region.

The 2005 Washington State Legislature provided the Washington State Department of Transportation (WSDOT) with $2.0 million to perform preliminary engineering and design of a new and rehabilitated rail line between Wheeler and Soap Lake, Washington. At the request of local decision-makers, a portion of these funds have been used to perform a more detailed analysis of the proposed *Northern Columbia Basin Rail Project*, as envisioned by the Port of Moses Lake and other stakeholders.

This Executive Summary describes the key findings of WSDOT's analysis of the project and its various segments. This summary also includes a list of possible next steps if the Washington State Legislature determines that the remaining project funds should be expended by June 30, 2007.

What is the Northern Columbia Basin Railroad Project?

The project would result in the extension of the Columbia Basin Railroad's existing rail network, as well as a new connection with the BNSF main line. As such, the *2003 Task Force Study* identified a number of rail improvements which could be implemented over five phases (segments). Each segment consists of a specific component:

- **Segment One** would construct a new rail line that would allow trains to bypass downtown Moses Lake;
- **Segment Two** would construct a new rail line which would connect the existing Columbia Basin Railroad (CBRW) line (Segment Three) to the east side of the Grant County International Airport;
- **Segment Three** would rehabilitate the existing CBRW line between downtown Moses Lake and the airport;
- **Segment Four** would result in the abandonment of the existing Columbia Basin Railroad line which runs through downtown Moses Lake; and
- **Segment Five** would construct a new line which would connect the Segment Two northern terminus to the BNSF Railway Company's (BNSF) main line at Soap Lake.

New Segment to Quincy

In late 2005, another potential improvement was identified. Members of the Quincy community requested that the WSDOT review the possibility of extending a rail line from the Grant County International Airport (Segment Two terminus) to the new transload facility located at the Port of Quincy. The transload facility allows trucks and containers to be loaded on and off railcars for transport to other destinations. This segment would be an alternative to the Soap Lake Segment (Segment 5).

Where is the project located?

The Columbia Basin Railroad, and hence the project, is located in Grant County, primarily in the Moses Lake area. In addition, proposed improvements would extend from Moses Lake to either Soap Lake or Quincy. **Exhibit ES.1** presents the general location of the project.

Exhibit ES.1
General Location of Proposed Routes

What are the key findings from this study?

This feasibility study identified a number of key findings related to the *Northern Columbia Basin Railroad Project*'s potential public benefits/ drawbacks, operations, estimated costs, ownership, and implementation process. The following summarizes these findings:

Potential Public Benefits/Drawbacks

- Seventeen existing and potential rail customers were interviewed for this feasibility study. Existing and potential rail customers indicated that only a limited number of carloads would be transported on any of the proposed new rail lines over the next few years. As a result, WSDOT is uncertain if the proposed project will produce any significant short-term economic benefits to the region.

- The primary purpose of the *Northern Columbia Basin Railroad Project* is to promote long-term economic development in the region. The existence of the new rail lines could attract new businesses to the area in the future. The new rail lines could have a usable life of 75 to 100 years, if properly maintained. It is possible that businesses seeking freight rail service could locate along the new rail lines sometime during this timeframe and produce the positive economic impacts envisioned by project proponents.

Operations

- If nothing is done, the Columbia Basin Railroad may abandon the rail line between McDonald and the Grant County International Airport.

- Segment 1 of the project is constructed, it could allow the Columbia Basin Railroad to abandon some portions of the deteriorating rail line passing through downtown Moses Lake. However, as many as four businesses that generate approximately sixty rail carloads per year could be negatively impacted by this abandonment.

- Shippers losing rail service could challenge abandonment of Segment 4; options to continue to provide rail service at another location should be identified and negotiated; abandonment of Segment 4 could trigger financial compensation to shippers who would lose rail service through abandonment.

- Based on current operating practices of the BNSF Railway Company (BNSF) on the main line connecting Everett, Wenatchee, Quincy, Soap Lake and Spokane (the Stevens Pass Line), it is uncertain that any significant freight rail travel time savings would result from a connection between this main line and the Grant County Airport, when

compared to the existing travel times between Moses Lake and the BNSF main line at Connell. Freight rail travel times between the Steven Pass Line and the Grant County International Airport would only be reduced if a large rail shipper locates at the airport. This would create a financial incentive for the BNSF to alter its current operating practices on the Steven Pass Line and provide more expedited service to and from this area.

Estimated Costs

- The total estimated cost of all five segments of the proposed Northern Columbia Basin Railroad Project range from $47.5 million to $94.5 million, in 2005 dollars. The cost variation depends on where the proposed rail line extending north of the Grant County Airport (Segment 5) connects with the BNSF main line. The lower cost option connects to the BNSF main line at Soap Lake and the higher cost is for a connection at Quincy. Costs also vary depending upon the type of environmental documentation which is prepared. **Exhibit ES.2** on the following page provides a summary of cost estimates for each segment, and the total project.

- Annual maintenance costs on the new and rehabilitated lines that comprise the proposed *Northern Columbia Basin Railroad Project* will be approximately $5,000 per track mile.

- Using a private sector business model that includes depreciation of the new and rehabilitated rail lines over a thirty year period, it would cost a private railroad operator between $2.3 and $3.8 million per year to maintain and operate the new and rehabilitated lines included in the *Northern Columbia Basin Railroad Project.*

Ownership

- The local short line railroad that serves the Moses Lake area is the Columbia Basin Railroad (CBRW). The railroad has indicated that it does not want to own any of the proposed new rail lines. However, the railroad would like to be the contracted operator of any new rail lines.

- Public funds are only granted to publicly owned rail lines; if Segment 3 continues to be under Columbia Basin Railroad ownership, rehabilitation and maintenance of this segment would be the Columbia Basin Railroad's responsibility. Public funds cannot be granted to the Columbia Basin Railroad, but could be loaned to the Columbia Basin Railroad; the Columbia Basin Railroad would have to pay it back to public funding agency over time.

Exhibit ES.2
Northern Columbia Basin Rail Project
Total Estimated Capital Costs
(in 2005 dollars)

Segment	Description	Construction Costs	NEPA/ SEPA[1]	TOTAL Costs
1	New rail line: Wheeler to Parker Horn	$9,577,000	$300,000 to $1 million	$9,877,000 to $10,577,000
2	New rail line: east of the GCIA	$9,329,000	$300,000 to $1 million	$9,629,000 to $10,329,000
3	Rehabilitation of CBRW line from Parker Horn to the GCIA	$1,844,000		$1,844,000
4[2]	Abandonment of CBRW line from McDonald to Parker Horn	$330,000[3]	$300,000 to $1 million	$630,000 to $1,330,000
4b[2]	Abandonment of CBRW line from Parker Horn to Moses Lake Rehabilitation of CBRW line from Moses Lake to McDonald	$116,000[3] (abandonment) $2,177,000 (rehabilitation)	$300,000 to $1 million	$2,593,000 to $3,293,000
4c	Rehabilitation of CBRW line from McDonald to Parker Horn	$4,086,000		$4,086,000
5[4]	New rail line: GCIA to Soap Lake	$25,229,000	$300,000 to $1 million	$25,529,000 to $26,229,000
5b[4]	New rail line: GCIA to Quincy	$69,440,000	$300,000 to $1 million	$69,740,000 to $70,440,000
	Total Project Costs with Soap Lake Terminus (Segments 1, 2, 3, 4, and 5)		$47,509,000 to $50,309,000	
	Total Project Costs with Quincy Terminus (Segments 1, 2, 3, 4, and 5b)		$91,720,000 to $94,520,000	

***NOTE**: Surface Transportation Board (STB) fees are typically waived for public agencies. It is assumed that these fees will be waived for the Northern Columbia Basin Railroad Project.*

1 *NEPA/SEPA: National Environmental Policy Act and State Environmental Policy Act environmental documentation. This table assumes that each segment undergoes the environmental process independently. If segments are grouped together, then total capital costs will be lower, due to the cost savings associated with fewer environmental documents.*

2 *These segments must be implemented in conjunction with construction of Segment 1.*

3 *These two cost estimates do not include the amount that may be recovered from scrapping old rails and ties, or from selling the right-of-way.*

4 *These two segments cannot be built without construction of Segment 2.*

Implementation Process

- The construction and abandonment of rail lines falls under the jurisdiction of the federal Surface Transportation Board. The *Northern Columbia Basin Railroad Project* proponent must get approval from the Surface Transportation Board before commencing with any construction or rail line abandonment. The STB process could take up to one year to complete.

- If the proposed project is to move forward, the necessary environmental work must be performed in close coordination with the Surface Transportation Board. The necessary environmental documentation could cost as much as $3.0 million and take up to four years to complete.

- Pursuant to federal regulations, if federal funding is earmarked for the *Northern Columbia Basin Railroad Project*, then right-of-way acquisition (with federal monies) cannot proceed until National Environmental Policy Act (NEPA) requirements are fulfilled. Washington State regulations are also similar for public projects which are funded with state monies – *State Environmental Policy Act* (SEPA) requirements need to be completed before right-of-way can be purchased with public funds.

What steps need to be taken to move the project toward construction?

If the Washington State Legislature determines that the *Northern Columbia Basin Railroad Project* should move forward, WSDOT, the Port of Moses Lake, and other project stakeholders will need to identify agency roles and responsibilities. At this time, it is assumed that the Port of Moses Lake, with guidance from WSDOT, will act as the project proponent.

At the onset, it is recommended that the Port of Moses Lake retain an attorney with STB experience. Experience has shown that working with STB could be extremely time consuming and complicated. An established, experienced attorney can help eliminate unnecessary steps and keep the project moving forward. Once an attorney is on board, the Port of Moses Lake will need to make formal application to the STB of its intention to construct some or all of the proposed rail lines.

The remaining balance of $1.7 million in state funds should be used work with STB and begin developing appropriate environmental documents for the overall project. This may require re-appropriation of some state funds to the

2007-2009 biennium because it in unlikely that necessary STB environmental work will be completed by June 30, 2007.

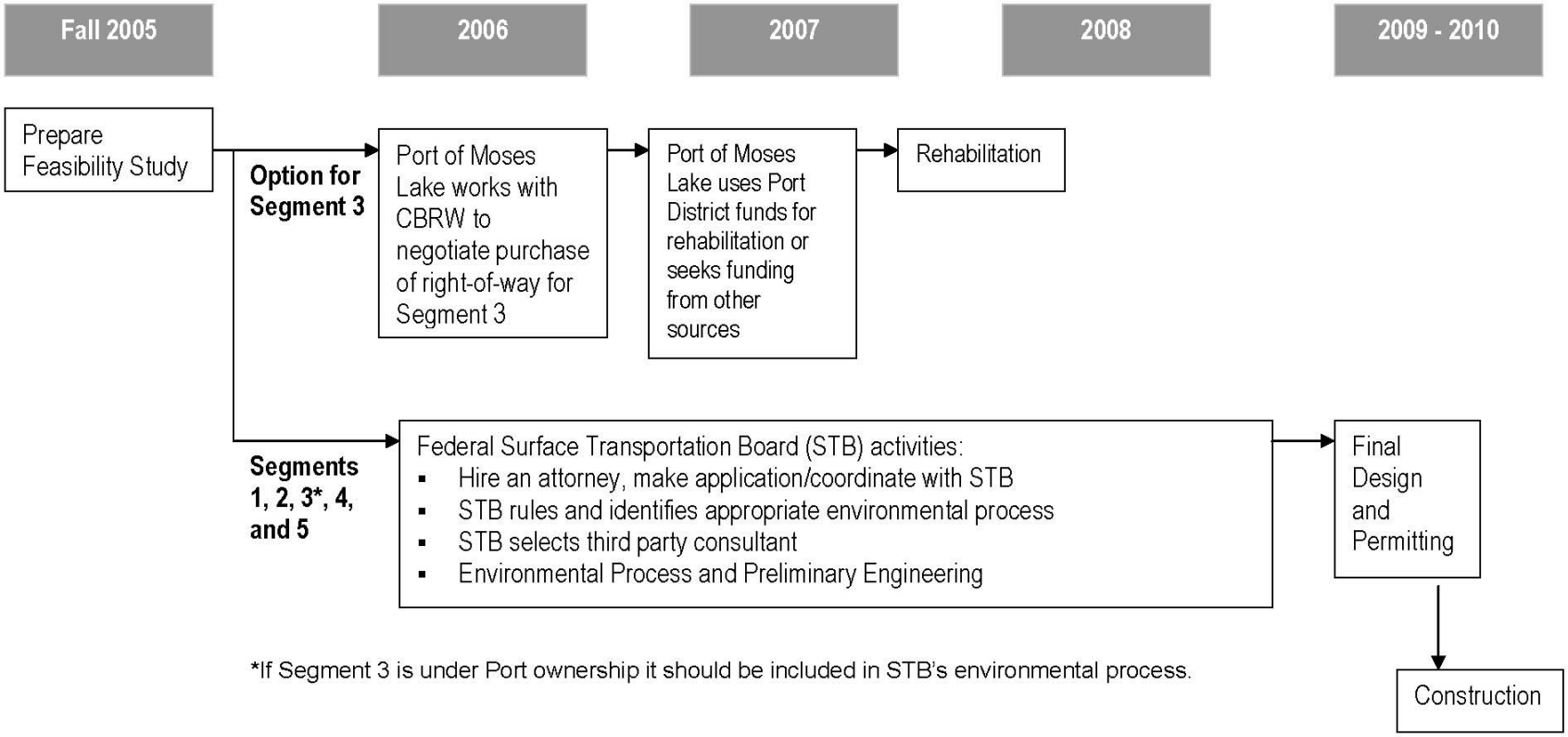
Upon completion of appropriate environmental documents, and if public funds are available, the Port of Moses Lake should take steps to acquire right-of-way for Segments 1 and 2. This could be done through either easements or outright purchase. The cost of gaining an easement or purchase of the land from current owners for a future rail line has yet to be negotiated. WSDOT's feasibility study includes right-of-way cost estimates, but these need to be refined before proceeding with right-of-way easement negotiation or right-of-way purchase.

Project proponents should concurrently seek additional private, state, and federal funds to build Segments 1 and 2.

The Port of Moses Lake should work with the Columbia Basin Railroad to determine the best way to finance rehabilitation of Segment 3.

Additional planning work should be performed before advancing Segments 5 or 5b. **Exhibit ES.3** on the following page shows the general process proposed for implementation of the *Northern Columbia Basin Railroad Project*.

Exhibit ES.3
General Implementation Process



*If Segment 3 is under Port ownership it should be included in STB's environmental process.

Chapter One: Introduction

Columbia Basin Railroad at SR 17 and Parker Horn

Many businesses throughout Washington State rely upon the Class I and short line railroads [1] to meet their shipping needs. The BNSF Railway Company (BNSF) is the primary Class I railroad in Washington State. The Columbia Basin Railroad (CBRW) is one of several short line railroads which provide freight rail service to local communities in Washington. A short line railroad serves industries in small communities by providing a link to a larger, national rail network. The Washington State Department of Transportation (WSDOT) is working with the Port of Moses Lake to examine the feasibility of improving the short line rail system serving the Moses Lake area.

Project Background

The Port of Moses Lake, along with other local stakeholders, formed a task force in 2002 to identify potential improvements to their freight rail service. The task force commissioned a preliminary feasibility study in July 2003. This study, entitled *Moses Lake Railroad Task Force Feasibility/Cost Study* (referred to as the *2003 Task Force Study* throughout this report),[2] considered the feasibility and potential cost of implementing the *Northern Columbia Basin Railroad Project.*

Following release of the study, local stakeholders worked with legislators to earmark funds for implementation of the project. During the 2005 legislative

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[1] *As of 2004, a Class I railroad (as defined by the Surface Transportation Board) has an operating revenue exceeding $277.7 million. There are seven Class I railroads in the United States. Short line railroads are classified as Class III railroads with annual revenue of $20 million or less.*

[2] *Prepared for the Port of Moses Lake by Eric L. Jessup and Kenneth L. Casavant Also released as: Strategic Freight Transportation Analysis: Rail Line Investment Alternatives Resulting from Abandonment: A Case Study of Moses Lake, WA, Eric L. Jessup and Kenneth L. Casavant, Washington State University, July 2003.*

session, the Washington State Legislature appropriated $2,000,000 to begin preparing for the construction of the *Northern Columbia Basin Railroad Project.*

What is the Northern Columbia Basin Railroad Project?

The project would result in the extension of the Columbia Basin Railroad's existing rail network, as well as a new connection with the BNSF main line. As such, the *2003 Task Force Study* identified a number of rail improvements which could be implemented over five phases (segments). Each segment consists of a specific component:

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New Segment to Quincy

In late 2005, another potential improvement was identified. Members of the Quincy community requested that the WSDOT review the possibility of extending a rail line from the Grant County International Airport (Segment Two terminus) to the new transload facility located at the Port of Quincy. The transload facility allows trucks and containers to be loaded on and off railcars for transport to other destinations. This segment would be an alternative to the Soap Lake Segment (Segment 5).

Where is the project located?

The Columbia Basin Railroad, and hence the project, is located in Grant County, primarily in the Moses Lake area. In addition, proposed improvements would extend from Moses Lake to either Soap Lake or Quincy. **Exhibit 1.1,** on the following page, presents the general location of the project.

Exhibit 1.1
Northern Columbia Basin Railroad Project Area

Who are the project partners?

The *Northern Columbia Basin Rail Project* has a number of project partners and stakeholders, which include the:

- Washington State Department of Transportation,
- Port of Moses Lake,
- Port of Quincy,
- Columbia Basin Railroad,
- BNSF Railway Company,
- Moses Lake Chamber of Commerce,
- Grant County Economic Development Council, and
- ASPI Group.

Local and state legislators are also playing an active role in moving this feasibility study, and the project, forward.

What is the purpose of this feasibility study?

The overall goal of this study is to supply legislators and stakeholders with the appropriate information so that decisions can be made regarding project funding, phasing, and implementation. Objectives to meet this goal are to:

- identify which segments are most feasible;
- provide conceptual engineering and cost estimates;
- identify environmental constraints; and
- specify timelines and procedures to implement each segment.

This feasibility study provides an independent review of the *Northern Columbia Basin Railroad Project*. The economic analysis contained in this feasibility study provides the foundation for decision-makers to determine if the benefits outweigh the costs in order to meet the needs of this project, as identified by project stakeholders.

Did project stakeholders review this report?

On January 16, 2006 stakeholders received a draft copy of this feasibility study. Copies (electronic and/or hard versions) were sent to:

- ASPI Group, Inc;
- BNSF Railway Company;
- City of Moses Lake
- Columbia Basin Railroad;
- District 13 legislators;
- Grant County Economic Development Council;
- Port of Moses Lake;
- Port of Quincy;
- Washington State Department of Transportation North Central Region; and
- Washington State legislative staff.

Comments received by these project stakeholders are contained in **Appendix K** of this document.

What is contained in this report?

The purpose of this report is to present data regarding the feasibility and economic benefits of each segment. An overview of existing rail operations and facilities is presented. Proposed routes for each segment and their potential costs are presented in Chapter Four. Chapter Five summarizes customer and stakeholder interviews and presents the findings of a cost/

benefits analysis for each segment. The final chapter suggests potential timeframes and steps necessary to move forward.

Technical appendices are also included in this report. Appendices contain interview results, detailed cost estimates, design standards, and conceptual engineering.

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Chapter Two: Purpose and Need for the Project

Reliable and efficient rail service may support a community's ability to attract new businesses and improve the local economy. The city of Moses Lake has maintained steady economic growth over time, as a result of the balanced transportation services available in the area, including air, rail and highway access. Implementation of the *Northern Columbia Basin Rail Project* would expand railroad service and add to the existing transportation network.

What is the purpose of the project?

The purpose of the *Northern Columbia Basin Rail Project* is to attract new rail-dependent businesses to the project study area. In addition, investment in this project would ensure the continued use and preservation of rail in the Moses Lake region. This project could achieve these goals by:

- relocating the existing rail line which runs through downtown Moses Lake,
- improving existing track between Parker Horn and the Grant County International Airport; and
- constructing new rail lines north of Moses Lake.

Is this project needed?

Based on numerous discussions and reviews, stakeholders from the Moses Lake community have determined that the *Northern Columbia Basin Railroad Project* is needed in order to preserve existing freight rail service and to stimulate economic development. The following summarizes these needs, as presented in the *2003 Task Force Study*:

Potential Abandonment of the Existing Rail Line

The Columbia Basin Railroad informed the Port of Moses Lake in 2003 that they were considering abandoning the existing line from McDonald through Moses Lake to the Grant County International Airport due to the low volume of shipments and the poor condition of the line.

Abandonment of this segment would directly impact existing firms that ship by rail. **Exhibit 2.1** (on the following page) illustrates the location of this line.

Another impact can be expected on those firms which do not lose rail service but may see their rates increased as the Columbia Basin Railroad strives to be profitable.

Safety

The Wheeler to downtown Moses Lake rail line's route is incompatible with the local community's plans for future economic and residential growth in downtown Moses Lake. Multiple trains moving through the area creates safety issues for local residents and potential new businesses.

Exhibit 2.1
Columbia Basin Railroad:
McDonald Siding to the Grant County International Airport

Note: this graphic reflects information provided in the 2003 Moses Lake Task Force Study and does not represent the line *abandonment analysis included in this report.*

Downtown Revitalization

Vision 2020, a citizen-led economic development group, focuses on revitalizing downtown Moses Lake and its waterfront. The removal of the railroad and acquisition of the right-of-way along the lake has been identified as being of high importance. Such a project would provide an opportunity for a waterfront park, boardwalk, and a bicycle/pedestrian trail.

Attract New Businesses

Grant County International Airport and Industrial Park provides service to many firms and individuals. The Airport has 2,000 acres of low-cost available land in its industrial park.

The other major industrial area, zoned and available for development, is to the east of Moses Lake, generally west of Wheeler. Firms using rail already exist in this area and the area is being actively promoted for future development. According to the Port of Moses Lake and the Grant County Economic Development Office, firms have expressed an interest in the area, and cited rail as being important to their relocation.

These industrial areas, and the services that they provide, took on increased importance when the *Growth Management Act* was passed. Under growth management, it would be difficult to rezone areas to industrial use, thus putting a premium on existing areas currently zoned for industry.

More information regarding industrial siting factors is provided in **Appendix A** of this report.

Is rail the key to attracting new development?

Mr. Brewer concedes that "location, location, location" is still the key driver in industrial firms' siting decisions, and that for most industries, this means proximity to high population centers. For that and other reasons, disappointments include Boeing (which sited its 787 program in Everett, WA) and General Dynamics (which chose Virginia after a national search.). And, according to Mr. Brewer, no amount of intermodal transportation facilities could have changed the decision of a few distribution centers, including a Walmart center, to locate elsewhere, closer to larger populations. Related to the population issue is the limited size of the workforce in Moses Lake, which also played a factor in the decision of these firms not to locate in Moses Lake. That said, however, Moses Lake is situated equally close to three population centers—Seattle, Portland and Spokane, and this gives the development community a good reason to be optimistic about the area's ability to attract intermodal freight business in the future.

What would happen if the project wasn't built?

Recent interviews with railroad representatives confirmed their desire to abandon the existing rail line from McDonald to the Grant County International Airport.[1] Because these rail lines have been consistently been lightly used and unprofitable, it is possible that abandonment could take place as early as this year (2006). According to the CBRW, the line was almost closed this winter due to track conditions that would have resulted in possibly unsafe operations.

Could the rail line be rehabilitated?

The project team estimates that it would cost approximately $67 million to rehabilitate the CBRW rail line from Connell to the Grant County International Airport (see **Appendix B**). Rehabilitation would include new crossing signals, upgrade of the tracks, rail, and ballast, and other required upgrades in order to operate the line to today's standards (of using heavier rail

[1] Discussion with Brigg Temple, president and owner of the Columbia Basin Railroad, on February 22, 2006.

cars). The CBRW confirmed[2] that they would continue to operate the rail line if it were upgraded to the standards presented in Appendix B. However, the CBRW believes that the existing line rail between McDonald and Parker Horn, does not fit within the long range industrial development plans for the region.

[2] Ibid.

Chapter Three
Existing Railroad Facilities and Operations

This chapter provides an overview of the existing rail facilities and operations in the Moses Lake area. An understanding of railroad characteristics will provide a foundation for the development and analysis of rail improvements in the Moses Lake area. The Glossary located at the end of this report, as well as **Exhibit 3.1** on the following page, provides general descriptions of railroad characteristics.

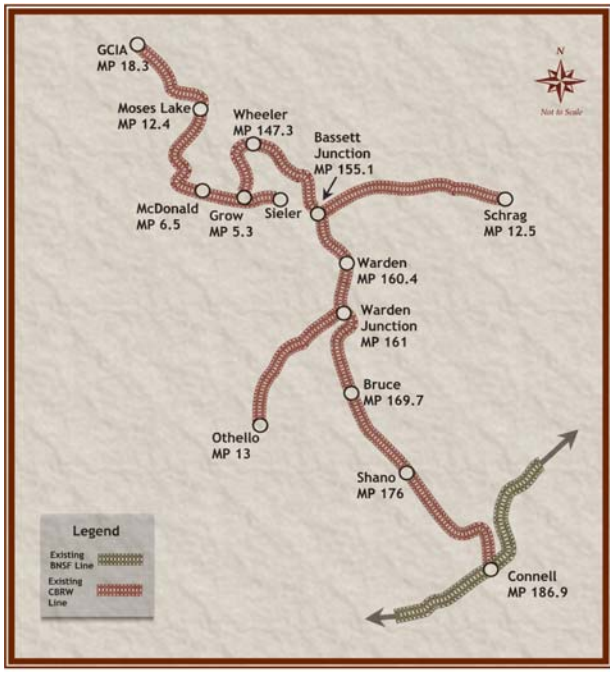
What are the current locations of the rail facilities?

Two rail lines are located in the project study area: the Columbia Basin Railroad (CBRW) and the BNSF Railway Company (BNSF). The CBRW is located within Grant County, while the BNSF rail lines serve areas throughout Washington State and beyond. As a short line railroad, the Columbia Basin Railroad serves local industries by transporting freight to and from the BNSF main line. Freight is then shipped to various ports or destinations via the main lines.

Columbia Basin Railroad

The Columbia Basin Railroad is a short line railroad serving central Washington (see **Exhibit 3.2**). The railroad is primarily an agricultural-based railroad handling grain, sugar beets, fresh and frozen potatoes, fertilizers, chemicals and paper products. The 84-mile rail line recently purchased by the Columbia Basin Railroad from the BNSF Railway Company. The

Exhibit 3.2
Columbia Basin Railroad Routes



Note: The Columbia Basin Railroad contains segments of rail lines from the old Burlington Northern line (predecessor of BNSF) and the Central Washington Railroad Company line. As such, rail mileposts are not consecutive, and reflect the history of the original railroads.

Exhibit 3.2
General Railroad Characteristics

CHARACTERISTIC	WHY IS IT IMPORTANT?
Track Structure	Track structure has four elements: rails, ties, ballast and sub-ballast. **Rails** are made of steel. Even though the steel is very hard, the rail wears out, just as highway pavement wears out. The **ties**, typically made of wood or concrete, support the rails. **Ballast** is crushed rock used to support the ties and keep the track in correct alignment. **Sub-ballast** is a finer grade of crushed rock placed beneath the ballast to divert water from the ballast and distribute the weight of the track to the sub-grade below. The condition of each of these elements dictates the weight and type of equipment that can be used on the track, as well as the speeds allowed on the track.
Number of Tracks and Sidings	The number of tracks affects the capacity of the line. Two tracks (also called **double track**) have more capacity (the number of trains that can move through the area) than one track (**single track**). **Sidings** also increase the capacity of a rail line. Sidings located along the line allow faster trains to overtake slower trains without affecting train traffic on the other track. The capacity of the rail line and the reliability of operation are affected by the time required to move between sidings.
Grade (the steepness of the tracks at various locations)	The steepness of the track dictates the types of trains that can use the rail line. Typical **grades** for freight trains do not exceed two percent, while grades for passenger trains can be as high as four percent.
Curves (often presented in degrees)	The tightness of the **curve** dictates the speed that a train can travel. The higher the degree, the tighter the curve, the slower the speed. Amtrak *Cascades* trains can travel faster through tight curves (than most trains) because they use tilt technology.
Speed Regulations	Train **speed limits** are generally regulated by the Federal Railroad Administration (FRA). The Code of Federal Regulations (49 CFR 213, Track Safety Standards) establishes classes of track with associated speed limits and detailed physical requirements for tracks in a given class. Speeds may also be restricted by the Washington Utilities and Transportation Commission (WUTC).
Traffic (Number of Trains)	The **number and type of trains** along a rail line relate directly to capacity. The more trains that are put on a track, the more the need for additional track signals and controls. Without these signals and controls, the speed and capacity of the rail line would diminish as traffic increases.
Width (Gage and Track Centers)	The rails of a railroad track are spaced 56.5 inches apart (the gage of track). To allow sufficient clearance between vehicles on adjacent tracks, the tracks are spaced at least fifteen feet apart (the track centers). Recent FRA Safety Regulations dictate that if rail traffic is to continue while maintenance is performed on an adjacent track, the tracks must be placed at least 25 feet apart from the center of each track. This is often referred to as 25-foot centerline.
Length	Each track that is not a through-route must be long enough to serve the intended purpose. Just as a parking space for a tractor-trailer must be of sufficient length for the vehicle, a railroad track must be long enough to hold even the longest train. The length of a typical freight train can be between 7,000 feet and 10,000 feet on main lines; on short line railroads, typical trains may range from ten to fifty cars.
Signals and Traffic Control	Signals help extend the engineer's sight distance and therefore allow greater speeds. Traffic control determines which trains can use which tracks – it increases safety and movement of trains.

The CBRW railroad employs twenty people.

The Columbia Basin Railroad's main branch extends from Connell to Wheeler. The CBRW connects with the BNSF main line at Connell. This is CBRW's only connection to the BNSF and the national railroad system.

The condition of the track between Connell and McDonald allows twenty-five miles per hour (mph) operation, except in particular short segments. The condition of the track beyond McDonald limits train speed to ten miles per hour and places restrictions on the movement of hazardous material shipments. The 2003 Legislative Transportation Package (New & Used Vehicle Sales Tax) funded a $400,000 improvement of the rail line between Warden and Wheeler so that it can accommodate 286,000 pound railcars.[1] Construction is scheduled to begin in spring of 2006. Total investment costs to maintain (for 75 years) and upgrade the CBRW rail line (and associated facilities) between Wheeler and Connell, would be approximately $55 million. **Appendix B** presents these cost estimates, as developed by the project team.

The rail line between McDonald siding (MP 6.5) and the Grant County International Airport cannot handle 286,000 pound rail cars; such cars are prohibited along this part of the line. The rail line is fairly flat, with minor curves along the line. None of the CBRW rail lines are quipped with a signal system.

BNSF Railway Company

The BNSF has three east-west main lines which serve Washington State. One of these main lines, the Stevens Pass route, extends through the project study area. In addition, the Columbia Gorge Route connects to the CBRW at Connell. The third east-west route over Stampede Pass connects Pasco with Auburn via Stampede Pass. **Exhibit 3.3** on the following page illustrates the location of these main lines.

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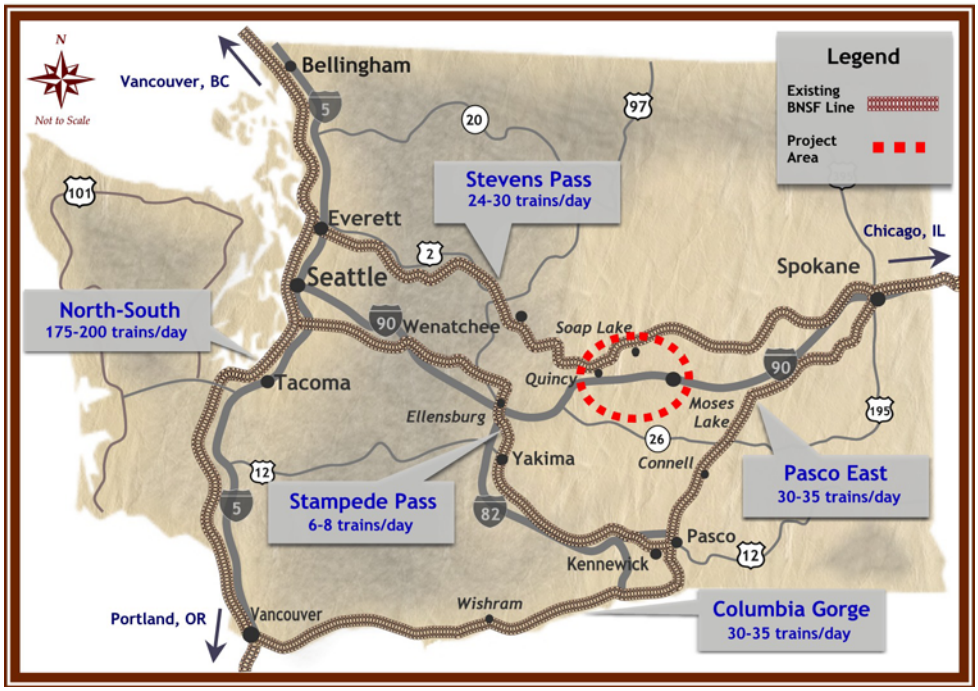
[1] *In the last several years, Class I railroads have begun to add large numbers of more efficient, but far heavier, 286,000-pound cars to their fleets. This increases the operating stresses and wear and tear on smaller railroads' track systems, and depending on the level of deterioration, could entirely prevent operation of 286K cars on certain light-density lines. As such, many smaller railroads are seeking to upgrade their track facilities to accommodate the new heavier loads. If track structures are not upgraded, the new 286K cars could increase track maintenance expenses. In addition, the ability of the existing track structure to carry such rail traffic would decrease over time.*

Exhibit 3.3
BNSF Railway Company Main Lines in Washington State



Decision makers need an understanding of the location and characteristic of these routes in order to assess the potential for improving Moses Lake area rail lines as identified in the *2003 Task Force Study*. As such, the following section discusses each of the BNSF main line routes.

Stevens Pass Route

The BNSF northern east-west main line is the former Great Northern (a BNSF predecessor railroad) route over Stevens Pass. The Stevens Pass main line extends between Everett and Spokane via Wenatchee. The predominant traffic on this line is intermodal traffic to and from the ports of Seattle and Tacoma. When freight is delivered via truck or ship, and then moved to another destination by rail, it is considered intermodal traffic.

The main line is single track for most of the distance and is known for the 7.79-mile Cascade Tunnel that passes below the summit of the Cascade Mountains between Scenic and Berne. There is a short stretch of second main track in Wenatchee. Another twenty-two miles of second main track is located between Lamona and Bluestem in Lincoln County. Centralized Traffic Control is used for almost the entire length of the line.

Columbia River Gorge Route (including the Pasco East main line)
The Columbia River Gorge route, also known as the southern route, has two segments: between Spokane and Pasco (also called Pasco East main line) and between Pasco and Vancouver, Washington (Columbia River Gorge main line).

The southern route extends through the Columbia River Gorge on the former Spokane, Portland & Seattle (SP&S, a BNSF predecessor railroad) main line. The Columbia River Gorge route is the only BNSF water-level crossing of the Cascade Mountain Range. Much of the grain and carload traffic to and from northwest Oregon, western Washington, and the British Columbia Lower Mainland is transported over this rail line.

The entire main line is single track except for a short section east of Vancouver and a short section west of Wishram. Centralized Traffic Control is used for the entire route.

The Pasco East main line (between Pasco and Spokane) passes through Connell in Franklin County, Ritzville in Adams County, and Sprague in Lincoln County. For the most part, the line runs parallel to US 395 and Interstate 90. There is a short section of double track near Spokane and another between Cunningham and Sand. Centralized Traffic Control is used on the entire line.

Stampede Pass Route
The former Northern Pacific main line through Stampede Pass is BNSF's central main line route. The Stampede Pass route extends between Auburn and Pasco via Stampede Pass. From Pasco, the route travels north to Spokane via the Pasco East main line.

General freight traffic is transported over this route; however, the Stampede Tunnel does not currently have sufficient clearance to accommodate double-stack containers, tri-level auto cars, and certain trailer-on-flatcar loads. The Auburn to Pasco route is used by only a small number of trains. Some of the trains, such as empty grain trains, are not necessarily scheduled to operate normally on this line but are run on an as-needed basis.

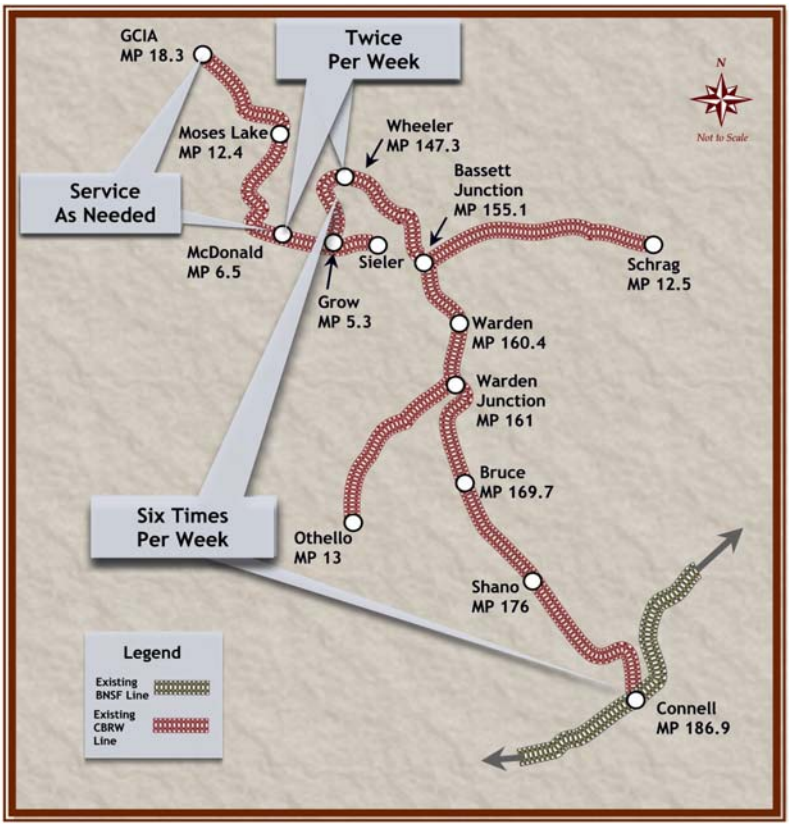
The Stampede Pass main line is all single track between Auburn and Pasco. There is a very short section of second main track at Easton, in Kittitas County. The entire line is controlled by Track Warrant Control, with short sections of Centralized Traffic Control (CTC) and Restricted Limits. The sections of CTC are only located between the switches of sidings. The single track segments between these sidings operate by Track Warrant Control. There are no Automatic Block Signals on this route.

How does the Columbia Basin Railroad and the BNSF Railway Company operate in the Moses Lake area?

The entire Columbia Basin Railroad handles roughly 8,400 carloads annually. Beyond the McDonald siding (MP 6.5), the CBRW only handles sixty-three cars of the total volume annually.[2] The primary commodities handled by the railroad are chemicals, fertilizer, rolled paper, cardboard, grain, fresh potatoes, frozen potatoes and cottonseed.

The CBRW operates six days per week, providing service as follows: Warden to Connell (including service to Othello) - 6:00 pm start, Warden to Wheeler - 1:00 pm start, and Warden local (which typically covers the Schrag Branch and switching in Bruce) - 6:00 am start. Service beyond Wheeler Road is two days per week, and service to the Grant County International Airport is on an as needed basis (covered by the Warden to Wheeler service). **Exhibit 3.4**

Exhibit 3.4
CBRW Service Schedule



[2] *Interview with the Columbia Basin Railroad.*

illustrates where, along the CBRW rail lines, in the project area, this service takes place. The railroad owns a number of small to moderate-sized locomotives of 1,200 to 2,000 horsepower. The railroad utilizes a combination of locomotives depending upon the cargo handled.

At Connell, the CBRW transfers freight to the BNSF Columbia Gorge main line. Cars are dropped off by the CBRW and then brought by the BNSF to their hump yard in Pasco. At the hump yard, cars are sorted by destination and then connected to trains traveling east and west.

Pasco Hump Yard

The Pasco hump yard is important to the Columbia Basin Railroad's rail traffic. There are two general types of rail freight traffic: unit train and carload. Carload traffic consists of trains of single car or small group shipments with various destinations. Carload traffic has many of the characteristics of a package delivery service (for example, Federal Express or UPS) except that the packages are very large, the size of a railcar. Unit train traffic consists of a full-size freight train of cars that is destined for a single destination. The unit train is assembled at one location and travels directly to its destination.

Like a package delivery service, railroads have sorting centers. Railroads call these sorting centers classification yards. The major classification yards, called hump yards, have special characteristics including high volume capacity and automation. Pasco Yard is a hump yard.

Pasco Yard is the regional sorting center for the Pacific Northwest. Trains from the east arrive in Pasco with an assortment of cars for destinations west of Spokane (the Spokane area has its own smaller classification yard for the Spokane area and northeast Washington traffic). Trains from Western Washington; Central Washington; the Portland, Oregon area; and the British Columbia Lower Mainland arrive in Pasco with an assortment of cars for destinations east of Spokane. After sorting, trains leave Pasco consisting of cars for a single area such as Longview, Tacoma, Seattle, Everett, Spokane, Denver, Minneapolis, or Chicago.

Railcars from throughout central Washington, including the Northern Columbia Basin's cars, are sorted in Pasco and added to the appropriate trains. Cars for central Washington destinations arrive on trains from the east and west and are made up into trains for delivery. The rail shipments originating or terminating on CBRW are sorted at Pasco Yard.

BNSF Main Line Operation

The BNSF main lines are each designated for specific types of operation. In order to understand the potential for rail improvements in the Moses Lake

area, it is critical to have an understanding of general BNSF operations along its main lines.[3]

Columbia Gorge Line

The BNSF Spokane Portland & Seattle (SP&S) Route currently is moving 30 to 35 trains per day between Seattle and Portland to Spokane. The line is operating at 75 to 83 percent capacity at this time. The BNSF has a major hump yard located in Pasco, WA. Virtually all carload traffic moves through Pasco.

Stevens Pass Line

The BNSF Great Northern route is the primary route between Seattle and points east. On average, the route handles 24 to 30 trains per day. This route is limited to one train per every 45 to 60 minutes due to the Cascade tunnel ventilation-related restrictions. At the present time the line is operating at near full capacity. The line handles virtually all intermodal and double stack trains to and from Seattle and Tacoma. For practical purposes, almost all of the traffic on the Stevens Pass line is unit train traffic, not requiring en-route sorting. The relatively small volume of carload traffic on the line is sorted and forwarded at the classification yard in Spokane. For stations between Wenatchee and Spokane, there is once daily local freight service.

Stampede Pass Line

The Northern Pacific Route is located through the center of the state of Washington. On average the route handles approximately five trains per day, most of which are manifest trains (carload freight) and empty grain trains. The route cannot accommodate intermodal double-stack trains due to the height restrictions on the tunnels on the route. Due to the signal system and limited number of sidings, and the single track line, this line has the current capacity to handle up to eight trains per day.

Are there other freight facilities in the area?

The Port of Quincy recently constructed a transload facility. The transload facility allows trucks and containers to be loaded on and off railcars for movement along the BNSF main line to Puget Sound ports or the eastern United States.

A 400-acre staging area for trains and trucks to transload their cargos was constructed, including double-stack train staging tracks, paving, fencing,

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[3] The most recent analysis of the BNSF main lines in Washington State was for the Washington Public Port Association. Their recent report, entitled WPPA Rail Capacity Study, 2004, provided the traffic and capacity data for the information contained in this section.

lighting, and security. Additional improvements will be needed at Quincy to allow for BNSF express trains to serve the facility and provide more efficient service to the Ports of Seattle and Tacoma.

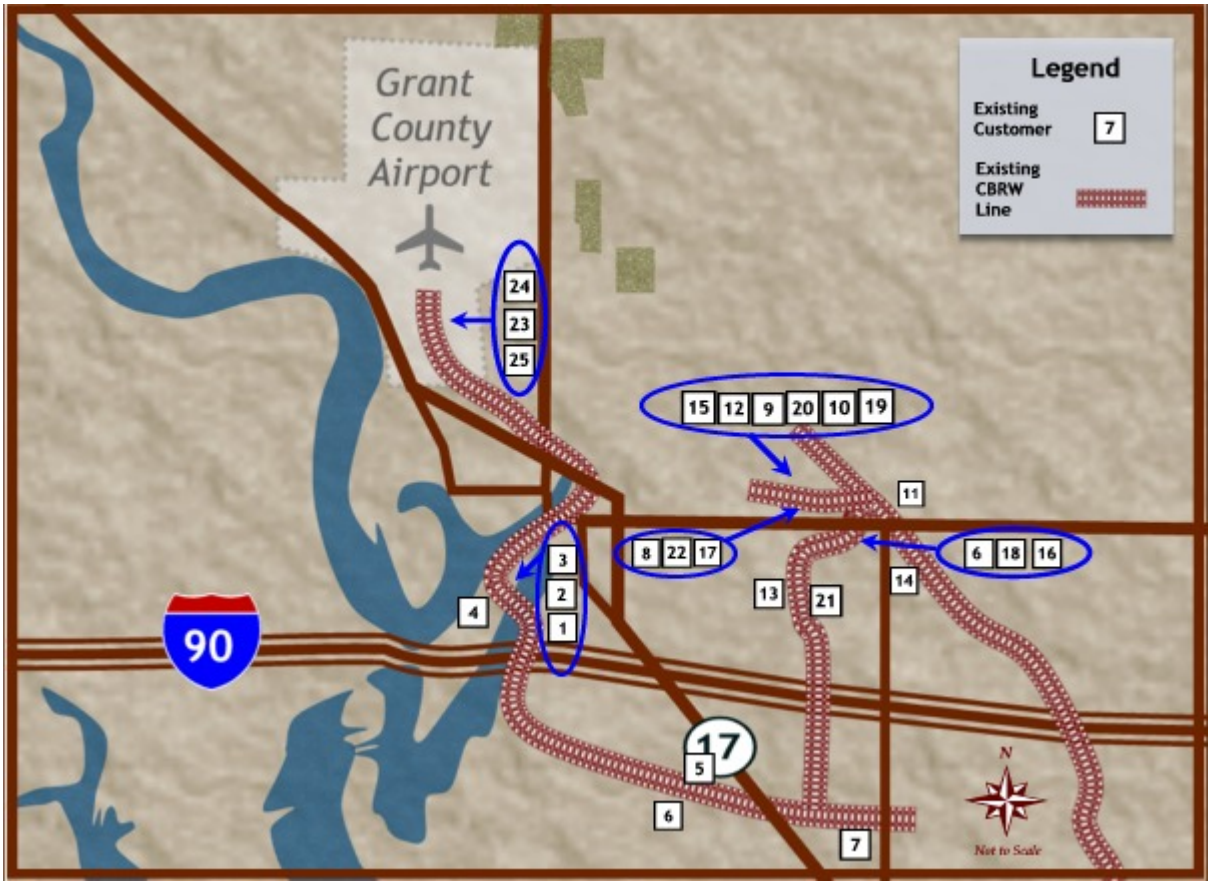
What is Columbia Basin Railroad's current customer base?

The Columbia Basin Railroad serves approximately 63 customers. The area under consideration for this report includes customers located at the Grant County International Airport and downtown Moses Lake (to McDonald siding). **Exhibits 3.5** and **3.6** (on the following page) list the current customers located within the Moses Lake area (including Wheeler) and indicates their general location.

Exhibit 3.5
Existing CBRW Customers in the Moses Lake Area

Customer	Primary Commodity	Map Location (Exhibit 3.6)
Brotherton Seed	pea and bean seed	1
Elma Hanson Produce	onions	2
Ferrell Gas	propane	3
Moses Lake Iron and Steel	scrap	4
Basic American Foods	potato products, oil	5
Maizena (also has a shipping facility in Wheeler)	agricultural, primarily feed	6
Wilbur Ellis (actually in Seiler)	fertilizer	7
AAA Concrete	cement	8
Advanced Silicon Materials (Solar Grade Silica)	silica/polysilicon	9
Americold Logistics	food products	10
Cenex Harvest Estates	grain products	11
Central Machinery	machinery	12
Central Leasing of WA	rock salt	13
Columbia Bean	molasses	14
D & L Foundry	scrap	15
Eka Chemical	salt, chemicals	16
J.R. Simplot	oil, potatoes	17
McKay Seed	agriculture	18
National Frozen Foods	food products	19
Proformex	feed additives	20
UAP Northwest	fertilizer	21
Weyerhaeuser	paper for corrugated boxes	22
Advanced Silicon Materials (Solar Grade Silica)	silica/polysilicon	23
Grant County PUD	transformers	24
Northern Energy	propane	25

Exhibit 3.6
General Locations of Existing CBRW Customers
in the Moses Lake Area



Chapter Four
Proposed Rail Improvements

The *2003 Task Force Study* proposed three new rail lines in the Moses Lake area. In October 2005, regional leaders added a northern route to Quincy to the routes under consideration. In addition, rehabilitation and abandonment for two other CBRW routes was also proposed. A total of six routes (segments) were developed for analysis. These segments are:

- **Segment 1**: new rail line from Wheeler to the existing CBRW line west of Parker Horn (Segment 3);
- **Segment 2**: new rail line east of the Grant County International Airport connecting with the existing CBRW line (Segment 3);
- **Segment 3**: rehabilitation of the existing CBRW rail line;
- **Segment 4**: abandonment of the existing line from McDonald to Parker Horn. In addition to this full abandonment, the project team also considered two other scenarios for Segment 4: full rehabilitation and a partial abandonment/rehabilitation;
- **Segment 5**: new rail line extending from Segment 2 to Soap Lake; and
- **Segment 5b**: new rail line extending from Segment 2 to Quincy.

Exhibit 4.1 on the following page presents the general location of the study area and the routes (segments) under consideration for this *Northern Columbia Basin Railroad Project*.

How were routes from the *2003 Task Force Study* confirmed?

Using aerial maps and other local data, the project team confirmed the location of each segment as identified in the *2003 Task Force Study*. An initial screening was performed to determine if the proposed new segments (Segments 1, 2, and 5) would be feasible, based on engineering and operating design standards. Following the initial screening, the project team further evaluated the preliminary alignments to ensure that significant constraints were not present that would prevent construction. Alignment locations were modified to take grade and curves into consideration. This fine-tuning served to minimize:

- stream and road crossings,
- construction impacts (such as an excessive cut and fill), and
- impacts to landowners.

Screening for Segment 5b

In October 2005, the project team was asked to consider a route from Segment 2 to Quincy (instead of Soap Lake). The project team reviewed existing aerial maps, topographic data, and county parcel maps. In addition the design team engineers drove and reviewed the areas between Moses Lake and Quincy. Based on the collected information and data, the project team developed an alignment that would meet railroad design criteria (in particular, curves and grades).

Exhibit 4.1
General Location of Proposed Routes

Were the alignments screened for potential environmental impacts?

The project team performed an initial environmental review of the four new alignments, as well as Segments 3 and 4 (two existing CBRW rail lines) in order to determine their feasibility, and to identify any potential fatal flaws. A fatal flaw is a term often used when evaluating design alternatives or new routes. If it is found that the proposed design/route would have a major

environmental or community impact which could not be avoided by redesign (or mitigation), the design/route would then be considered to have a fatal flaw.

Using standard *National Environmental Policy Act* (NEPA) and *State Environmental Policy Act* (SEPA) resource categories,[1] the *Northern Columbia Basin Railroad Project* segments were evaluated to see if any impacts would prohibit implementation of the proposed segments. The evaluation was strictly qualitative and did not include any technical or detailed scientific analysis.

Project team scientists, engineers, and planners visited the study area[2] and noted environmental and community characteristics along the proposed alternative routes. Using an evaluation matrix, team members determined if any fatal flaws would result from the implementation of any of the route options.

It was concluded that none of the segments would have a fatal flaw which would prohibit its construction. The results of the fatal flaw analysis are presented in **Appendix C** of this document.

What design standards did the project team use for design of the segments?

Tracks were designed based on BNSF Guidelines for the Construction of Industry Track. This specification provides for wood or concrete tie, jointed or continuous welded rail (CWR) ballasted track with 112 pound or heavier rail. It was assumed that the new lines would require a right-of-way of at least one hundred feet. **Appendix D** provides a detailed discussion of the design standards used.

The Design Team assumed the operating standards of the existing railroad would control the operating design standards.

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[1] *A resource category includes natural environmental and community features such as wetlands, land use, wildlife, economics, etc.*

[2] *Project planners and scientists did not visit the Segment 5b route due to snowy conditions in the Quincy and Moses Lake area. Instead, county environmental maps and aerial photographs were used to assess the route. Project engineers performed field reviews and photographed the route. These photographs were also used by the planners and scientists to perform the fatal flaw analysis for Segment 5b.*

What would be the general configuration of each segment?

As discussed earlier, each segment presented in the *2003 Task Force Study* was revisited. Alignment and design adjustments were made. In addition, a new segment to Quincy was developed. This segment would be an alternative to Segment 5, which terminates at Soap Lake. The following provides an overview of each segment and its location. **Appendix E** of this document presents more details about each segment, including conceptual engineering and design profiles. The following provides general descriptions of each segment:[3]

Segment 1

Several variations were developed for Segment 1, based on the *2003 Task Force Study*. In the *Study*, various configurations were considered for the rail line between Wheeler and Parker Horn. The project team reviewed the proposed alternatives, as well as identified other possible routes.
Based on environmental and engineering considerations, the project team concluded that the best alternative for Segment 1 connects at the industrial lead track (Scalley Lead) in Wheeler.[4] The following discussion focuses on this Preferred Alternative for Segment 1.

Route Description

Segment 1 (Preferred Alternative) generally follows the proposed alignment shown in the *2003 Task Force Study*. This route has been suggested because it is the most direct, and therefore the shortest route to connect the CBRW rail line at Wheeler with the existing line at the Grant County International Airport (Segment 3).

The Preferred Route connects to an industrial lead track, sometimes referred to as the Scalley Lead, on the east end. This lead is connected to the Columbia Basin Railroad's main line at the station of Wheeler. At the existing west end of the lead, there are three tracks. The north and south tracks are currently used by rail shippers. The rail line ties on to the middle track at this location and generally heads west. The track swings slightly north and thereby bisects an existing quarter section irrigation circle, then proceeds west and crosses Road L NE at a signalized grade crossing. It also passes through minor irrigation facilities and farm access roads. The line continues west, traversing small industrial properties just south of the Moses Lake Municipal Airport. The line then crosses through an above grade irrigation canal. The line

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[3] *Segment descriptions are presented from east to west. When mileposts are used, they are CBRW's rail timetable mileposts.*

[4] ***Appendix D*** *provides information about the other alternative scenarios for Segment 1.*

continues west into current agricultural land. The rail line then turns north and crosses Road K at-grade, at a signalized crossing, just south of Road 4 NE. The line then sweeps to the south and then again to the west and comes parallel and just north of State Route 17. The line crosses Parker Horn on a combination fill and bridge structure (similar in configuration to SR17) and then swings slightly more to the north and connects to the south east end of Segment 3.

Segment 1 traverses a combination of land zoned heavy industrial, light industrial, and agricultural. Although much of the land along this route is zoned for heavy or light industrial use, much of the land is currently being used for agricultural uses. **Exhibit 4.2** illustrates the general location of Segment 1 (Preferred Route).

Exhibit 4.2
Segment 1 General Location

Segment 2

The proposed new track in Segment 2 runs from the north end of Segment 3 to the northeast to provide railroad access to the east side of the Grant County International Airport (and possibly beyond using Segment 5 or 5a).

This segment follows the general alignment suggested in the *2003 Task Force Study*. The line crosses Randolph Road about two thousand feet east of the intersection of Randolph and 22nd Street. The line generally follows Randolph Road as it swings to the north around the east side of the airport. The line then swings east and re-crosses Randolph Road about five hundred feet north of Tyndall Road. From there the line curves to the north and continues north about six thousand feet before terminating. This segment has two at-grade crossings (both on Randall Road), and traverses primarily land zoned for heavy industrial use. **Exhibit 4.3** shows the general location of this segment.

Exhibit 4.3
Segment 2 General Location

Exhibit 4.4
Segment 3 General Location

Segment 3

Segment 3 consists of almost four miles of existing track (not including numerous industry spurs at the Grant County International Airport) that was originally built by the military to access Larson Air Force Base (now Grant County International Airport). The track connected at Moses Lake to the then Milwaukee, St. Paul and Pacific Railroad (Milwaukee Road). The line segment has five private grade crossings, and eleven public crossings, two of which are signalized. There are no bridge structures.

The proposed upgrade of this segment consists primarily of replacement of rail and other track materials. The line upgrade would permit use of larger 286,000 pound rail cares. These size cars are becoming standard on the main line rail system. Upgrades to the two signalized grade crossings (Stratford Road and Harris Road) are also included in the design, although they are in good to excellent condition. With these upgrades this portion could easily meet FRA Track Safety Standards for Class 2, which would allow the line to be operated at 25 miles per hour (mph). The existing alignment and general profile would not be changed. **Exhibit 4.4** shows the general location of this segment.

Segment 4

The *2003 Task Force Study* targets Segment 4 for abandonment. This segment consists of approximately seven miles of former Milwaukee Road track, built in the1920s. The BNSF Railway Company operated the line from 1980 to 1987. Since1987, the Washington Central Railroad Company and its successor, the Columbia Basin Railroad, have operated this line. The track is constructed with mostly 85 and 90 pound rail with small segments of 80 pound and 60 pound rail. Some of the grade crossings have 112 pound rail. The weight of the rail dictates the load which can be carried on the track – the higher the rail weight, the heavier the load that can be carried.

This segment crosses three bridges. **Exhibit 4.5** lists these crossings and their characteristics. This rail line has eight private grade crossings, and ten public crossings, three of which are signalized.

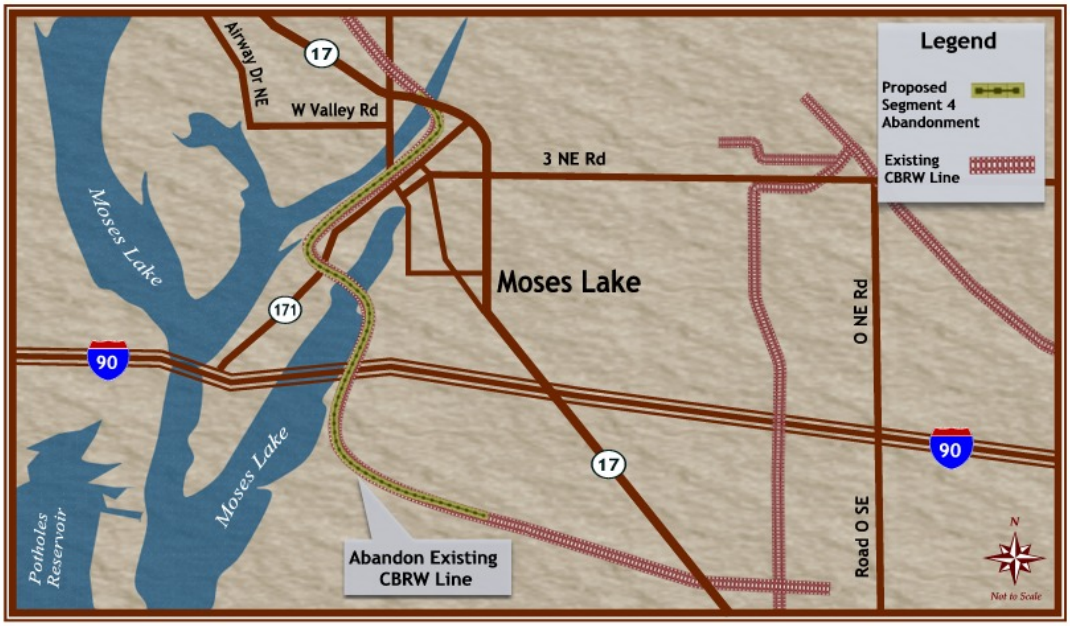
Exhibit 4.5
Bridges in Segment 4

Bridge Location	Characteristics
Near MP 12.4 crosses Interstate 90	Deck girder bridge in very good condition due to raising and related rehabilitation work performed in 2001
Approximately MP 13.4	A very short, all timber structure that crosses Pelican Horn in fair condition
Parker Horn near MP 16	A larger pile timber structure in fair condition

The southern portion of the rail line is in fair condition and has received recent minimal maintenance, including new crossties in 2001. The northern portion is in generally very poor condition. The northern portion of the line runs through congested, publicly accessed areas.

The work to abandon this segment consists of removal of track, turnouts (switches), and the grade crossing signal equipment. Each public at-grade crossing would be repaired. Bridges along the rail line would be left in place. Abandonment would also include salvage of steel and some ties. Rotten ties would have to be disposed. **Exhibit 4.6** on the following page shows the general location of this segment.

Exhibit 4.6
Segment 4 General Location



Alternate Scenarios

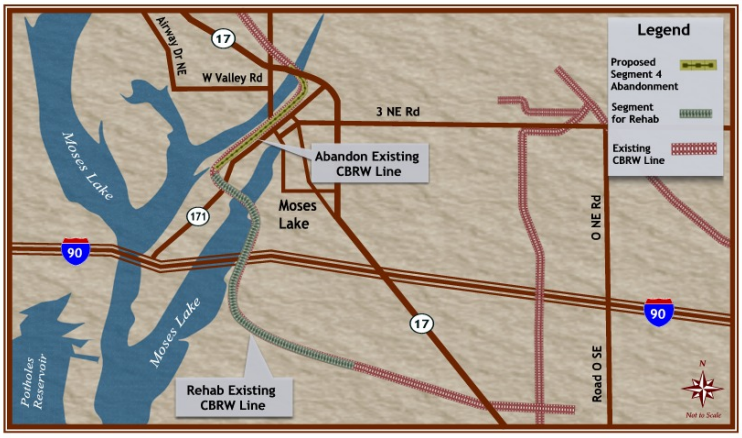
During the course of the project team's research and analysis, various proposals and suggestions were made (by team members as well as stakeholders) regarding the existing CBRW rail line between McDonald and Parker Horn. The project team decided to consider two additional scenarios for Segment 4: a full rehabilitation of this segment of rail line (Segment 4b) and a partial abandonment/ rehabilitation of the line (Segment 4c).

Segment 4b, a full rehabilitation of the line between Parker Horn and McDonald, could be implemented in lieu of construction of Segment 1. Segment 4c would be implemented in conjunction with the construction of Segment 1.

For Segment 4c, the project team assumed that the existing rail line would be abandoned from Parker Horn, along the waterfront, to the Moses Lake Iron and Steel facility (approximately two miles). From the Iron and Steel location, the existing rail line would be rehabilitated to McDonald (just over four miles). **Exhibit 4.7** identifies the general location of Segment 4c.

Segment 5

Exhibit 4.7
Segment 4c General Location



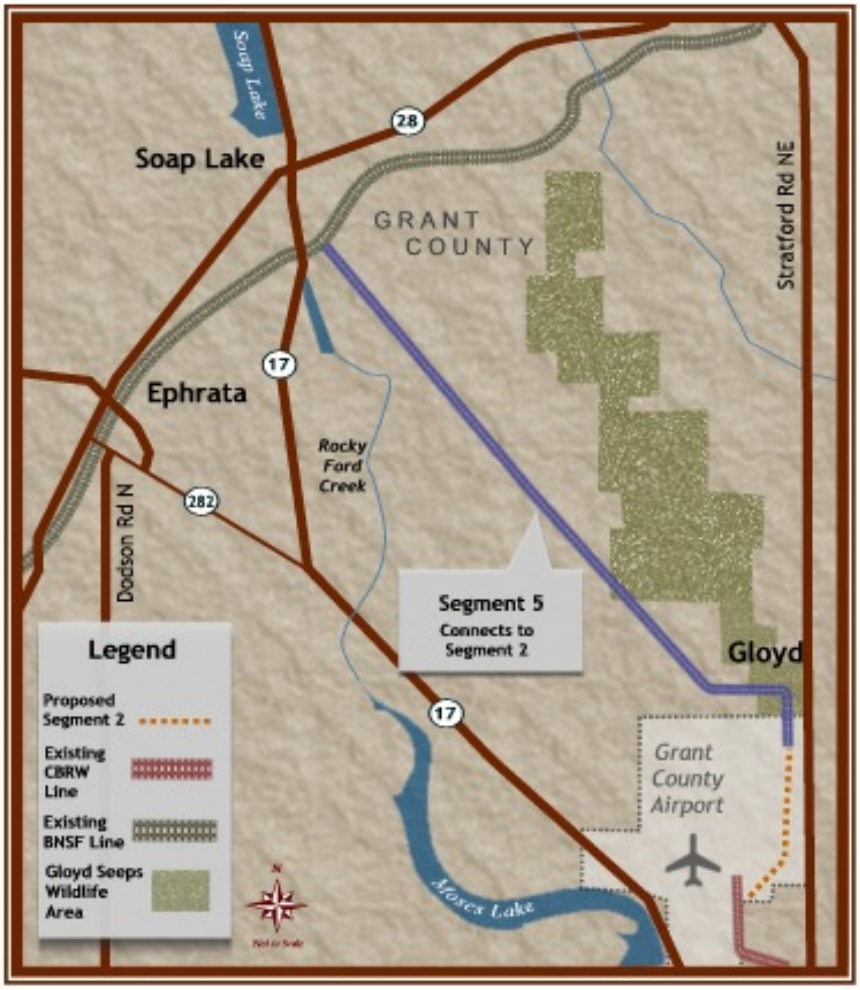
Segment 5 runs generally north and west (as an extension of the proposed Segment 2) to reach the BNSF's east-west Steven's Pass main line at Soap Lake. Segment 5 runs north before heading west, and then runs west, about 2500 feet south of Road 10 NE towards the north end of the long runway at Grant County International Airport. At this point the line swings north and west and crosses Road 10 NE. The line then proceeds in a generally northwest direction. The line proceeds north and crosses Road C NE and Road B.5 NE.

About two miles south of the proposed BNSF connection point, three turnouts would be needed to provide south access to interchange/storage tracks. The main track (and the tracks just described) would parallel each other and continue to the north to another three turnout lead configuration. Just north of that point, another turnout would provide a "wye" arrangement of two tracks – one leading to the west and one to the east – where these tracks are connected with two additional turnouts in the BNSF's main line. These tracks would allow a BNSF train from either direction to quickly "clear" the main line and perform switching clear of the main line and "arrange" another train for east- or west-bound movement on the main line. These tracks would allow the Columbia Basin Railroad or other designated operator of the new rail line (Segment 5) to leave and pick up cars clear of the BNSF's main line. This segment primarily traverses very dry, desolate and undeveloped land. **Exhibit 4.8** shows the general location of this segment.

Segment 5b

Segment 5b is an alternative to Segment 5. Segment 5b runs north and mostly west (as an extension of the proposed Segment 2) to reach the BNSF's east-west main line at a point about two miles east of Quincy. Segment 5b takes the same path as Segment 5 in the first few miles: it ties on to Segment 2 at MP 3.6 then heads north before heading west, and then runs

Exhibit 4.8
Segment 5 General Location



west, about 2500 feet south of Road 10 NE towards the north end of the long runway at the Grant County International Airport. At this point the line swings north and west and crosses Road 10 NE at MP 6.4. The line then proceeds in a west, then northwest direction. At about MP 13 the line swings around to the southwest. The line then immediately crosses the Rocky Ford Creek at MP14.5 and begins to head almost due south. The line continues and then swings around and heads northwest. Near MP 19 the line turns to the west then south and runs about one mile before turning west, then crosses Road A NW near MP 20.2. As the line continues west and south again it begins to run though rural and agricultural areas. At MP 22.8 the line crosses a significant irrigation canal then immediately crosses Dodson Road. At MP 23.5 the line begins to swing west and slightly north before running almost

Exhibit 4.9
Segment 5b General Location

due west to Quincy. The line then crosses Road E near MP 25. It then crosses SR 283 at-grade near MP 25.5. The line crosses other private undeveloped roads and crosses another irrigation canal near MP 27.2. The line crosses Road H near MP 28. At MP 29.1 another irrigation canal/wasteway is crossed. The line then crosses Road J.5 and another canal. The line crosses Road K about MP 31.1 and SR 28 at MP 31.2. The line continues generally west to the single turnout connection with the BNSF main line at MP 34.3. The line crosses three additional roads in this area: Roads L, M, and 10.9.

The segment traverses a combination of undeveloped, agricultural, rural residential and rural industrial land. About half of the distance is undeveloped land, one third being agricultural and the remaining portion being either rural residential or industrial. Between ninety and one hundred parcels are impacted by the segment. The segment does not have any grade separation structures and no significant bridges. It would require four signalized grade crossings that include three State Routes and Dodson Road. **Exhibit 4.9** shows the general location of this segment.

How much would it cost to build and/or abandon the segments?

Construction cost estimates were prepared for each segment. Costs were developed in 2005 dollars, and are presented in **Exhibit 4.10** on the following page. Cost estimates presented in this study are conceptual.

Exhibit 4.10
Estimated Capital Costs by Segment (in 2005 dollars)

Segment	Description	Estimated Cost[1]
1	New rail line: Wheeler to Parker Horn	$9,577,000
2	New rail line: east of the GCIA	$9,329,000
3	Rehabilitation of CBRW line from Parker Horn to the GCIA	$1,844,000
4[2]	Abandonment of CBRW line from McDonald to Parker Horn	$330,000[3]
4b[2]	Abandonment of CBRW line from Parker Horn to Moses Lake Rehabilitation of CBRW line from Moses Lake to McDonald	$116,000[3] (abandonment) $2,177,000 (rehabilitation)
4c	Rehabilitation of CBRW line from McDonald to Parker Horn	$4,086,000
5[4]	New rail line: GCIA to Soap Lake	$25,229,000
5b[4]	New rail line: GCIA to Quincy	$69,440,000

[1] *These costs do not include Surface Transportation Board (STB) licensing fees. Nor do they include the cost of preparing environmental (National Environmental Policy Act (NEPA) or State Environmental Policy Act (SEPA)) documentation.*

[2] *These segments must be implemented in conjunction with construction of Segment 1.*

[3] *These two cost estimates do not include the amount that may be recovered from scrapping old rails and ties, or from selling the right-of-way.*

[4] *These two segments cannot be built without construction of Segment 2.*

What are conceptual cost estimates?

Cost estimates can be conceptual, preliminary, or final (or someplace in between each of these steps, depending upon the level of project design). For conceptual cost estimates, known information is compiled, and then industry-wide, standard format, unit costs are used to estimate how much a particular element would cost. For example, in order to estimate the cost of rail for a 10,000 foot siding, that length would be multiplied by the current, industry standard cost for the particular rail that would be used.

The specifics of construction are not available during the conceptual stage of engineering. The unknown site-specific information will cause the cost of the

individual items to vary. Experience indicates that for the level of detail of the available information, a contingency[5] of thirty percent is sufficient to cover issues found during engineering in the corridor, and the cost of environmental mitigation will generally be ten to twenty percent of the construction total. The environmental contingency is used to ensure that any mitigation that may be necessary is accounted for in the conceptual cost. At the conceptual level, it is rarely known what, if any, mitigation would be required.

The estimates can also be affected by time. There can be significant unpredictable factors in addition to the normally predictable effect of inflation. In recent years, the costs of building materials, notably steel, concrete, and fuel have been volatile. As development spreads, property values for vacant land may increase considerably or land that was vacant at the time of the estimate may have been developed.

What is included in each cost estimate?

Costs were developed using 2005 dollars, and include:

- Track-Related Earthwork,
- Track,
- Structures,
- Drainage, and
- Utilities.

The estimated cost of right-of-way acquisition was also included in these cost estimates. It was assumed that all land had to be purchased for Segments 1, 2 and 5. **Appendix F** provides a summary of the methodology used to estimate right-of-way costs.

Mobilization,[6] contingencies, environmental mitigation, engineering design, and construction management are also part of the estimates, and varied based

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[5]*Contingency is an amount intended to mitigate the unknown. As the level of detail in project plans increases, the contingency in the estimate is reduced because there is less that is unknown. The contingency in the final engineered estimate is small because the estimate includes all information that it is possible to know without beginning construction. There are almost always surprises, but their effect is generally small enough to fall within the contingency amount. Occasionally, a surprise such as the discovery of historical artifacts or underground water can have an impact that exceeds the amount estimated for contingency.*

[6]*Before the work can progress, the contractor must mobilize the necessary workers, equipment and supplies required to construct the rail line. Staging areas need to be set up and materials need to be brought to the construction area.*

on the specific segment. Sales tax of 8.8 percent was also applied to each estimate. The detailed capital cost estimates for each segment are included in **Appendix G**.

What is not included in these cost estimates?

Cost estimates presented in this document do not include Surface Transportation Board (STB) licensing fees, nor do they include the cost of preparing environmental (*National Environmental Policy Act* (NEPA) or *State Environmental Policy Act* (SEPA)) documentation. Since both of these cost items will need to be negotiated and identified by the appropriate federal and state agencies, it was determined that their range of costs could vary significantly and therefore should not be included in the estimates. More discussion regarding the STB requirements and environmental documentation is included in Chapter Six of this document. Estimates of potential cost ranges are also presented in Chapter Six.

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Chapter Five
Economic and Operations Analysis of Segments

In order to assess the feasibility of the *Northern Columbia Basin Railroad Project*, the project team performed an economic and operational analysis. The purpose of this analysis was to determine the economic benefits that may be realized by the Moses Lake community, and Washington State. Interviews with existing and potential customers, discussions with stakeholders, and a detailed economic model were performed.

How was the economic and operational analysis performed?

The economic and operational analysis entailed four steps. Information from project engineers and planners, as well as interview results (as discussed below) was used as input into the economic model.

Step One: Interview Stakeholders and Existing/Potential Rail Customers

The project team began the feasibility study analysis by interviewing project stakeholders. Stakeholders include agencies and organizations that were identified (by other stakeholders) as having direct or indirect interest in the *Northern Columbia Basin Railroad Project.* **Appendix H** provides the results from each interview.

Interviews with stakeholders provided information such as:

- existing Columbia Basin Railroad (CBRW) customers and services provided,
- potential CBRW customers,
- current CBRW and BNSF rail operations and issues related to the existing rail,
- rail line conditions (both CBRW and BNSF), and
- potential changes to future rail operations.

In addition, the BNSF interview focused on rail operations in the state of Washington, as well as the BNSF's position related to the potential changes to the rail lines in and around Moses Lake.

Existing Customers

The project team worked with the Columbia Basin Railroad to obtain a list of existing rail customers. Between August and December 2005, interviews with some of these customers were conducted.

Existing customers identified for interviews were selected based on current rail volumes and potential for growth due to the construction of new rail lines. Not all existing rail customers were interviewed due to time constraints.

Potential Customers

Using a list obtained from the Port of Moses Lake, potential CBRW customers were interviewed. The purpose of these interviews was to determine the company's current truck/intermodal volumes, potential future rail volumes, and the impact any rail line changes would have on their particular business now and in the future. Each customer was provided information on the proposed changes to the rail line during the interviews. These potential customers are currently non-rail users, but due to the expansion in the rail service were deemed likely to consider switching to rail in the future. In addition, these targeted potential customers have, at one time, expressed interest in expanding or moving to the Moses Lake region.

Exhibit 5.1 presents a list of existing and potential customers that were interviewed. **Appendix I** provides the results from each interview. In some cases, existing and potential customers did not wish to participate in this survey. **Exhibit 5.2** lists those companies contacted, but who were not interviewed. A chronology of the interview process is presented in **Appendix J**.

Step Two: Perform Economic and Operational Analysis

Combining the results of the interviews from customers, railroads, and stakeholders, the project team developed a financial model that simulated the operations of the Columbia Basin Railroad. Included in the financial model were the capital costs for each segment, projected rail carload traffic obtained from customer/stakeholder interviews, and operating costs associated with providing rail service on each segment (also a function of the rail volume forecasts). The outcome of the model was the incremental benefit/cost associated with each segment.

Exhibit 5.1
Existing and Potential CBRW Customers Interviewed

Customer	Type of Customer
Advanced Silicon Materials, LLC	Existing
Air America Fuel & Service	Potential
Basic American Foods	Existing
Boeing Corporation	Potential
Brotherton Seed Company, Inc.	Existing
Chemi-Con Materials	Potential
D & L Foundry and Supply, Inc.	Existing
Elmer Hansen Produce	Existing
Ethanol Plant	Potential
Ferrell Gas	Existing
General Dynamics	Potential
Genie Industries, Inc.	Potential
J.R. Simplot Company	Existing
Moses Lake Industries	Potential
Moses Lake Iron and Steel	Existing
Northern Energy	Existing
Weyerhaeuser	Existing

Exhibit 5.2
Companies Contacted but Not Interviewed

Company	Reason for Not Interviewing	Customer Status
Americold Logistics	Contacted, No Response	Existing
Cartwright Enterprises, Inc.	Contacted, No Response	Potential
Eka Chemical	Contacted, No Response	Existing
Inflation Systems	Contacted, No Response	Potential
National Frozen Foods	Contacted, No Response	Existing

An incremental methodology was chosen due to the confidential nature of the railroad's operating finances. By using a base case scenario and then calculating additional operating costs, incremental differences are developed. For example, if the construction of a new rail line to the airport generated new carloads, then only the new carloads are included in the analysis. All existing business was assumed to remain at the current level unless otherwise noted. Using this method, the CBRW did not need to provide existing rates, operating expenses, other income, or salaries, and the project team could compare the base case against various alternatives associated with each segment.

Segments

The project team analyzed segments by geographic location. This approach was taken so that decision-makers could piece together various segment combinations in order to see what the operational and capital costs would be depending upon the segments chosen for implementation. This approach is especially useful when geographic locations have more than one alternative (for example, rehabilitating Segment 4 instead of building Segment 1). **Exhibit 5.3** presents the geographic locations and their corresponding segment alternatives.

Operating Costs

Operating costs were analyzed for each segment alternative. Using the incremental approach, it is assumed that the base case scenario is at zero dollars. Therefore, the operating costs presented in this analysis are the amounts it would cost to operate that segment alternative in addition to the existing costs associated with rail operations.

Exhibit 5.3
Segments Analyzed by Geographic Location

Geographic Location	Segment and Description
Wheeler to Parker Horn	Segment 1 Construction and Segment 4 Abandonment **OR** Segment 1 Construction and Segment 4 Partial Abandonment/ Rehabilitation **OR** Segment 4 Rehabilitation
Parker Horn to south of the Grant County International Airport (GCIA)	Segment 3 Rehabilitation
South of GCIA to northeast of GCIA	Segment 2 Construction
Northeast of GCIA to BNSF main line	Segment 5 to Soap Lake **OR** Segment 5b to Quincy

Incremental Operating Costs[1] analyzed in this analysis include the following:

- Maintenance of Way,
- Depreciation,[2]
- Transportation,[3] and
- General and Administration.

Assumptions and definitions associated with these costs are presented in **Exhibit 5.4**.

Step Three: Break Even Analysis

A break even analysis is an accounting tool used by for-profit organizations to estimate the point in which their costs (varied and fixed) will be offset by revenue. At this point – the break even point – the business begins to turn a profit.

The outcome of the financial model provided the information for a break even analysis. In some instances, break even carload statistics were calculated in order to determine the magnitude of rail volume required to support the segment. The results of the interviews, financial analysis, and operational review were combined to provide a foundation for decision-makers to develop future recommendations.

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[1] Maintenance of equipment is typically considered in an operating cost analysis. However, equipment cost is assumed to remain constant throughout all of the segments. Since a locomotive may be operated by two or three crews on different shifts, and the projected volume of traffic does not challenge the horsepower output of the locomotives, a very large increase in volume would be required before additional locomotives would be necessary. Therefore it was not included in this analysis.

[2] In typical accounting analyses, depreciation is included as part of maintenance of way costs; however, for this analysis, the project team provided depreciation as a separate line item.

[3] Crew cost is typically considered a transportation cost. For this analysis, it is assumed that crew cost remains constant throughout all of the segments due to the modest amount of additional pickup and delivery switching represented in the projections being offset by movement between the industries at the increased speed allowed by the rehabilitation and/or new construction. Should volumes increase significantly (to approximately 4,000 carloads annually, then additional crews would probably be required; however, such volumes are not found in the available data.

Exhibit 5.4
Operating Cost Categories and Assumptions

Operational Cost Category	Assumptions
Maintenance of Way	Maintenance of way Operating Costs typically include all costs associated with maintaining the rail line. Costs include labor, maintenance vehicles and machinery, replacement rails, ties, and ballast, and vegetation control. Maintenance of way expenditures for rail lines can vary from $3,000 per mile (per year) for low gross ton routes to over $20,000 per mile (per year) for high gross tons, populated areas, difficult terrain or high speeds. A lump sum of $5,000/mile per year was used for all new and rehabilitated segments.
Depreciation	Depreciation is an accounting item that represents the reduction in value of an asset over time and is important in tax calculations. Theoretically, depreciation also represents money that must be put aside to renew assets when they are no longer usable (have no remaining value). Both the new construction and the rehabilitation construction costs are assumed to be amortized (straight line) over a thirty-year period. However, the track components used in construction or rehabilitation could be generally expected to remain in service for over 75 years.
Transportation	The transportation costs are compared as a function of the additional operating miles associated with each segment. Transportation costs typically include fuel, crew, trackage fees, locomotive depreciation, and other fees associated with actual train operations. The largest cost in this category (for this analysis) is locomotive fuel consumption. Locomotive fuel consumption varies with the amount of power that the locomotive is producing and is typically measured in gallons per hour. The type of locomotives used by the CBRW typically consumes approximately five gallons per hour when idling and approximately 122 gallons per hour at full power. They produce approximately sixteen horsepower per gallon per hour. Twenty to forty gallons per hour fuel consumption is typical for the type of loading and terrain found in the study area. Fuel consumption is also dependent upon the amount and nature of switching performed. While picking up and delivering cars at an industry, there is a mixture of idling and movements requiring a small portion of the locomotive's full power. The locomotive may consume six gallons of fuel, depending upon the specific nature and amount of the switching, without traveling any distance along the line. Since the amount and nature of pickup and delivery switching is not known, a conservative fuel consumption per mile is assumed. This is based upon typical operation of an industrial line similar to the proposed segments. The cost of locomotive operation also includes other consumables such as lube oil, brake shoes, and sand (for traction). The cost of these items is insignificant compared to the cost of fuel and is absorbed into the conservative fuel consumption per mile measurement. Fuel costs do not include any costs between Wheeler and Connell. Therefore for this analysis, fuel costs were calculated as: Fuel Cost per Gallon: $3.00 Fuel Consumption: three gallons/mile per locomotive Service Schedule: six days/week Locomotives per Train: two
General and Administration	General and administrative costs typically include rent, office supplies, utilities, payroll, licenses, and insurance. For this analysis, it was assumed that general and administrative costs – except for insurance -- do not change as a result of the new segments. Insurance costs were included at a rate of $10,000 per year per new segment, and no increase on existing segments.

What were the general findings from the customer interviews?

The project team interviewed transportation managers located in the Moses Lake region. The interview results reflect their perspective on transportation and shipping options.[4]

Rail Traffic

For the most part, current rail customers use trucks for inbound freight movement and rail for outbound products. Many of the companies receive their materials from within a one hundred mile radius of Moses Lake; thus, rail is not economically competitive with trucks. The physical location of Moses Lake within the state of Washington is very conducive to truck movements when compared to the rail alternative. The State allows for double-trailers with a maximum length of 61 feet, as well as a maximum gross vehicle weight of 105,000 pounds. These factors make truck transportation an extremely attractive option for shippers. Excellent interstate routes also contribute to the effectiveness of trucking.

For outbound shipments, the companies primarily use rail for long distances and truck for shorter distances, including short trips to local ports for export. It is not economical for rail carriers to haul intermodal containers and trailers short distances given that the overall costs for rail cannot compete with truck. In general, intermodal rail service becomes profitable for distances exceeding five hundred miles.

Customer Service

With only one exception (Chem-Con Materials who used rail in the past, but now uses truck exclusively), all of the interviewees were very pleased with the rail service and the operations of the Columbia Basin Railroad. The companies stated that the railroad is responsive to their needs and concerns and provides good rail service. Most of the interviewees indicated that there were definitely problematic rail issues with the Class 1 carrier connections (the Union Pacific Railroad and/or the BNSF Railway Company) concerning equipment supply, equipment condition, and transit times.

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[4] The project team found that most transportation decisions were not controlled from the Moses Lake offices of the companies interviewed, but rather from headquarter locations. By doing this, it allows the company to negotiate with carriers (rail, truck, ship) for a larger volume of traffic.

Interviewees' Perspective on the *Northern Columbia Basin Railroad Project*

Four existing rail customers could be directly affected by the proposed project: Ferrell Gas, Brotherton Seed, Moses Lake Iron & Steel, and Hanson Produce. These companies are located within a section of the railroad that may be targeted for abandonment (Segment 4). Each company expressed concerns regarding the rail line abandonment.

Two potential rail customers, Chem-Con Materials and Air American Fuel, indicated that the new rail line will not change their transportation strategies, nor did either company indicate that its future transportation plans included rail, regardless of the potential for construction of new rail lines.

Moses Lake Industries, located at the Grant County International Airport (GCIA), indicated that having access to rail at their facility will have a direct impact on their ability to compete with international competitors. Currently all traffic moves by truck. Moses Lake Industries is anticipating an increase in both inbound and outbound products for future years. According to a company spokesperson, if the facility does not acquire rail access, the facility will have to close within four years.

Only one company within the project area -- D & L Foundry -- indicated that rail traffic would increase due to the relocation of the existing CBRW rail line (Segment 1). Segment 1 will pass next to their facility. With the addition of a rail spur (assumed to be paid by D & L) to their facility, D & L Foundry could receive direct rail service.

No other companies interviewed indicated that they would alter their shipping patterns and options significantly if any of the Segments were implemented, including the extension of the rail line from the GCIA eastern section to the BNSF main line near Soap Lake or the Port of Quincy.

What were the results of the financial analysis for rail options between Wheeler and Parker Horn?

Three alternatives were analyzed for the area between Wheeler and Parker Horn. These alternatives include:

- Construction of Segment 1 and Abandonment of Segment 4;
- Construction of Segment 1 and the Partial Abandonment/Rehabilitation of Segment 4; and
- Rehabilitation of Segment 4.

The following presents the economic findings for each of these scenarios.

Construction of Segment 1 and Abandonment of Segment 4

This scenario assumes the construction of a new rail line from the end of the Wheeler Spur to Parker Horn (rail MP 16.2). Approximately 3.7 miles of new track must be installed. The existing CBRW line from McDonald to Parker Horn would be abandoned.

Rail Operations

This scenario will not disrupt the existing rail schedule or operations. The crews will be required to operate south of Wheeler to handle customers located south of Moses Lake as well as operate west of Wheeler to handle traffic toward the GCIA. The CBRW will be able to continue to serve existing customers and any potential customers on the new rail segment with the existing crews, schedules and locomotives. Rail operations will be discontinued along the existing line between McDonald and Parker Horn. The four existing customers on the line will either have to be relocated or find alternate shipping options.

Return on Capital Investment

The total cost to construct the rail line (Segment 1, Preferred) is $9.577 million. In addition, the cost to abandon Segment 4 is projected to be $330,000. The new line will pass through property earmarked for industrial development. At this time, there are no new businesses planning to locate in this area, but the opportunity to provide rail service to businesses or industries will be in place for the future. The cost of abandoning Segment 4 could partially be offset by the sale of the rail right-of-way and surplus ties and rail. However, these sources of funds have not been incorporated into this analysis. In the short run, the economic analysis does not forecast any significant increase in carloads for the next several years and therefore, there is no economic return on the capital investment associated with the relocation of the rail line.

Operating Costs

For this scenario, operating costs are projected to increase by approximately $369,000 per year. Specific operating cost changes are predicted to be:

- **Maintenance of Way**: There will be an increase in the maintenance of way costs per mile as a result of the new rail line. Maintenance on the line will be at least $5,000 per mile, which is based on standard industry costs per mile for Class 2 track. Maintenance will cease on the portion of the abandoned rail line through Moses Lake, $12,000 per year.

- **Depreciation**: Depreciation charges associated with the new construction of Segment 1.
- **Transportation**: The construction of the rail line will increase fuel expenses only by a minor amount to reflect an increase in mileage associated with the new routing.
- **General and Administrative**: There will be a slight increase in the insurance expenses and property tax expenses as a result of the new construction.

The details of the cost components are provided in **Exhibit 5.5**.

Break Even Analysis

Were Segment 1 constructed and Segment 4 abandoned, traffic levels would have to be increased by approximately:

- 10,773 cars per year with a $50 per car fee added to the transportation charge; or
- 5387 cars per year with a $100 per car fee added to the transportation charge; or
- 3,591 cars per year with a $150 per car fee added to the transportation charge,

for the next thirty years in order to repay the capital costs.

Exhibit 5.5
Annual Incremental Changes in Operating Costs
Construction of Segment 1 and Abandonment of Segment 4

Operating Cost Category	Base Case	Segment 1 and Segment 4
Maintenance of Way	$12,000	$18,500
Depreciation		$330,233
Transportation	$404,352	$426,816
General and Administration		$10,000
Total Expenses	$416,352	$785,549
Increase in Cost from Base Case		$369,197

Segment 1 with Partial Abandonment/Rehabilitation of Segment 4

This scenario would construct a new rail line from Wheeler to Parker Horn (Segment 1), as well as abandon/rehabilitate the existing CBRW line (Segment 4). The rail line through the center of Moses Lake will be partially removed (from Moses Lake to Parker Horn) and the remaining track (from McDonald Avenue to Moses Lake) will be rehabilitated. This scenario would allow for:

- continued rail service to the Grant County International Airport (GCIA);
- continued rail service to the four existing rail customers located along the CBRW rail line (Segment 4); and
- safer and increased pedestrian use of the land along the lake in downtown Moses Lake.

This route assumes the new rail line will connect to the end of the Wheeler Spur and run through to MP 16.2. Approximately 3.7 miles of new track would be installed. Segment 4 would be rehabilitated from McDonald to the Moses Lake Iron and Steel facility.

Rail Operations

Implementation of this scenario would not disrupt the existing rail schedule or operations. The crews will be required to operate south of Wheeler to handle customers located south of Moses Lake as well as operate west of Wheeler to handle traffic toward the GCIA. The CBRW will be able to continue to serve the existing customers and any potential customers on the new and existing rail segment with the existing crews, schedules and locomotives.

Return on Capital Investment

The total cost to relocate the rail line (Segment 1) is $9.577 million. In addition the cost to abandon a portion of Segment 4 is projected to be $116,000 and the cost to rehabilitate the rail line between McDonald and Moses Lake is projected to be $2.177 million. The cost of abandoning part of Segment 4 could partially be offset by the sale of the rail right-of-way and surplus ties and rail. However, these sources of funds have not been incorporated into this analysis. The new line will pass through property earmarked for industrial development. At this time, there are no new prospective businesses planning to locate in this area, but the opportunity to provide rail service to businesses or industries will be in place for the future. In the short run, the economic analysis does not forecast any significant increase in carloads for the next several years and therefore, there is no economic return on the capital investment associated with this scenario.

Operating Costs

Rail operating costs for this scenario are expected to increase by approximately $525,000 per year. Specific operating cost changes are predicted to be:

- **Maintenance of Way**: There will be an increase in the maintenance of way costs per mile as a result of the new rail line. Maintenance on the new and rehabilitated line will be at least $5,000 per mile, which is based on standard industry costs per mile for Class 2 track. Maintenance ($12,000 per year) will cease on the portion of the rail line which extends through Moses Lake.
- **Depreciation**: Depreciation charges associated with the new construction of Segment 1 and rehabilitation of just over four miles of Segment 4.
- **Transportation**: The new rail line will increase fuel expenses only by a minor amount to reflect an increase in mileage associated with the new routing.
- **General and Administrative**: There will be a slight increase in the insurance expenses and property tax expenses as a result of the new construction.

The details of the cost components are provided in **Exhibit 5.6**.

Exhibit 5.6
Annual Incremental Changes in Operating Costs
Construction of Segment 1 and Partial
Rehabilitation/Abandonment of Segment 4

Operating Cost Category	Base Case	Segment 1 Partial Rehab/Abandonment Segment 4
Maintenance of Way	$12,000	$45,000
Depreciation		$402,800
Transportation	$404,352	$482,976
General and Administration		$10,000
Total Expenses	$416,352	$940,776
Increase in Cost from Base Case		$524,424

Break Even Analysis

Were Segment 1 constructed and Segment 4 partially abandoned, traffic levels would have to be increased by approximately

- 12,908 cars per year with a $50 per car fee added to the transportation charge, or
- 6,454 cars per year with a $100 per car fee added to the transportation charge, or
- 4,303 cars per year with a $150 per car fee added to the transportation charge

for the next thirty years in order to repay the capital costs.

Rehabilitation of Segment 4

This scenario assumes that the existing CBRW rail line from McDonald to Parker Horn would be rehabilitated.

Rail Operations

The proposed rehabilitation of the rail line through Moses Lake will not disrupt the existing rail schedule or operations. The crews will continue to operate the CBRW as they do today. The CBRW will be able to continue to serve the existing customers with the existing crews, schedules and locomotives.

Return on Capital Investment

The total cost to rehabilitate the rail line is estimated to be $4.086 million. The economic analysis does not forecast any increase in carloads on the CBRW as a result of the rehabilitation of the rail line. Therefore, there is no economic return on the capital investment associated with the rehabilitation of the rail line.

Operating Costs

As a result of the rehabilitation of the rail line, annual operating costs are expected to increase by approximately $160,000 per year. Specific operating cost changes are predicted to be:

- **Maintenance of Way**: There will be an increase in the maintenance of way costs per mile as a result of the rehabilitation. Maintenance on the line will be at least $5,000 per mile, which is based on standard industry costs per mile for Class 2 track.
- **Depreciation**: Depreciation charges associated with the rehabilitation of of Segment 4.

- **Transportation**: The rehabilitation of the rail line will increase fuel expenses only by a minor amount to reflect an increase in mileage associated with the new routing.
- **General and Administrative**: There will be a slight increase in the insurance expenses and property tax expenses as a result of the rehabilitation.

The details of the cost components are provided in **Exhibit 5.7**.

Break Even Analysis

Were Segment 4 to be retained and rehabilitated without construction of Segment 1, traffic levels would have to be increased by approximately

- 4,443 cars per year with a $50 per car fee added to the transportation charge, or
- 2,22 cars per year with a $100 per car fee added to the transportation charge, or
- 1,481 cars per year with a $150 per car fee added to the transportation charge

for the next thirty years in order to repay the capital costs.

Exhibit 5.7
Annual Incremental Changes in Operating Costs
Rehabilitation of Segment 4

Operating Cost Category	Base Case	Rehabilitation of Segment 4
Maintenance of Way	$12,000	$36,000
Depreciation		$136,200
Transportation	$404,352	$404,352
General and Administration		
Total Expenses	$416,352	$576,552
Increase in Cost from Base Case		$160,200

What were the results of the financial analysis for rail options between Parker Horn and the Grant County International Airport?

Segment 3 includes the rehabilitation of approximately 3.9 miles of track and the installation of one road crossing. Total estimated capital cost is $1.8 million.

Rail Operations

Operations on this existing rail line will not change significantly with the rehabilitation of Segment 3. The crews will be able to operate at increased speeds, but given that the distance is short (less than five miles) there are no anticipated changes to the crew costs.

Return on Capital Investment

The cost to rehabilitate the rail line is projected to be $1.8 million. The economic analysis does not forecast any increase in carloads on the CBRW as a result of the rehabilitation of the rail line. Therefore, there is no economic return on the capital investment associated with the rehabilitation of the rail line.

Operating Costs

The operating expenses will increase slightly by approximately $68,000 as a result of the rehabilitation of Segment 3. Specific operating cost changes are predicted to be:

- **Maintenance of Way**: There will be an increase in the maintenance of way costs per mile as a result of the rehabilitation. Maintenance on the line will be at least $5,000 per mile, which is based on standard industry costs per mile for Class 2 track.
- **Depreciation**: Depreciation charges associated with the rehabilitation of Segment 3.
- **Transportation**: The rehabilitation of the rail line will increase fuel expenses only by a minor amount to reflect an increase in mileage associated with the new routing.
- **General and Administrative**: There will be a slight increase in the insurance expenses and property tax expenses as a result of the rehabilitation.

The details of the cost components are provided in **Exhibit 5.8**.

There are no anticipated increases in traffic volume related to Segment 3. If the industrial properties along this route develop significantly, thus warranting

an increase in rail operations, then operating costs (crews, locomotives, fuel,

Exhibit 5.8
Annual Incremental Changes in Operating Costs
Rehabilitation of Segment 3

Operating Cost Category	Base Case	Segment 3
Maintenance of Way	$12,000	$19,500
Depreciation		$61,467
Transportation	$404,352	$404,352
General and Administration		
Total Expenses	$416,352	$485,319
Increase in Cost from Base Case		$68,967

etc.) will increase to reflect the change in operations.

Break Even Analysis

Were Segment 3 to be rehabilitated, traffic levels would have to be increased by approximately

- 2,005 cars per year with a $50 per car fee added to the transportation charge, or
- 1,003 cars per year with a $100 per car fee added to the transportation charge, or
- 668 cars per year with a $150 per car fee added to the transportation charge

for the next thirty years in order to repay the capital costs.

What were the results of the financial analysis for rail options between south of the Grant County International Airport and northeast of the airport?

Segment 2, the Grant County International Airport (GCIA) Extension, proposes to extend the existing CBRW rail line at the south end of the GCIA to the industrial areas located east of the airport. Segment 2 includes the acquisition of just over three miles of right-of-way, installation of track and two road crossings.

Rail Operations

The CBRW will be able to operate the rail line extension to the east side of the airport with the existing crews for at least the next several years when rail volumes are projected to be low (only Moses Lake Industries indicated a need for rail in this location - twenty to fifty-two carloads per year). If the industrial parks are occupied with rail users, it is anticipated that the rail operator will need to increase the number of crew starts to cover the switching for these businesses. Large businesses have more switching needs than smaller customers, sometimes requiring a minimum of two switches per day during different shifts. At least five-day-a-week service and probably six-day service is recommended if the properties become fully developed with rail customers.

Return on Capital Investment

The cost to extend the rail line at the airport is projected to be $9.3 million. In the long run, it is possible that high-volume rail shippers may locate on the east side of the airport, but at this time there are no anticipated new rail customers. If, in the future, there are new rail customers, freight revenues generated from these new businesses will help to offset the capital costs associated with the construction of the rail line depending upon the agreement between the funding agency and the rail operator.

Operating Costs

The operating expenses will increase by approximately $379,000 as a result of the construction of Segment 2. Specific operating cost changes are predicted to be:

- **Maintenance of Way**: There will be an increase in the maintenance of way costs per mile as a result of the new rail line. Maintenance on the line will be at least $5,000 per mile, which is based on standard industry costs per mile for Class 2 track.
- **Depreciation**: Depreciation charges associated with the construction of Segment 2.
- **Transportation**: The construction of the rail line will increase fuel expenses only by a minor amount to reflect an increase in mileage associated with the new routing.
- **General and Administrative**: There will be a slight increase in the insurance expenses and property tax expenses as a result of the new construction.

The details of the cost components are provided in **Exhibit 5.9**.

Exhibit 5.9
Annual Incremental Changes in Operating Costs
Construction of Segment 2

Operating Cost Category	Base Case	Segment 2
Maintenance of Way		$27,000
Depreciation		$310,967
Transportation	$404,352	$444,787
General and Administration		$10,000
Total Expenses	$404,352	$783,754
Increase in Cost from Base Case		$379,402

There are no anticipated increases in traffic volume related to Segment 2. If the industrial properties along this route develop significantly, thus warranting an increase in rail operations, then operating costs (crews, locomotives, fuel, etc.) will increase to reflect the change in operations.

Break Even Analysis

If segment 2 were to be constructed, traffic levels would have to be increased by approximately

- 10,145 cars per year with a $50 per car fee added to the transportation charge, or
- 5,072 cars per year with a $100 per car fee added to the transportation charge, or
- 3,382 cars per year with a $150 per car fee added to the transportation charge

for the next thirty years in order to repay the capital costs.

What were the results of the financial analysis for rail options northeast of GCIA to the BNSF main line?

Two segment alternatives were evaluated as a potential route between the north end of Segment 2 and the BNSF main line. Segment 5 would extend from the north end of Segment 2 to Soap Lake. Segment 5b would extend from the north end of Segment 2 to Quincy. Regardless of the route, implementation of Segment 2 must be completed in order to construct Segment 5.

Construction of Segment 5 from the north end of Segment 2 to Soap Lake

The scenario would extend from the northeast end of the Grant County International Airport north to the BNSF main line near Soap Lake, WA. The rail line can be extended only if Segment 2 is completed, but is not dependent upon Segments 1, 3 or 4.

Rail Operations

The extension of the rail line to the BNSF at Soap Lake will not increase the number of CBRW crews, but will require a change in operations. The CBRW crew(s) will serve the entire line beginning at either Wheeler or Warden, continuing through Moses Lake and the GCIA, and interchanging with the BNSF at Soap Lake. At the current volumes the crew(s) will be able to switch all on-line customers and interchange traffic with one job. If rail traffic increases as a result of new rail-dependent businesses located at the airport and the other industrial areas along the route, the rail operator will need to increase the number of crews and possibly locomotives.

Economic Analysis

The cost to extend the rail line from GCIA to the BNSF at Soap Lake is projected to be $25.2 million. In order to do the extension, the rail line must be extended to the east side of the airport (Segment 2). The minimum cost of Segment 2 and Segment 5 is $34.6 million.

Based on customer interviews, no new customers, that will utilize rail, have been identified as locating into the Moses Lake region. Therefore, there are no new freight revenues that can be applied to the repayment of the construction of any portion of Segment 5. Should new businesses locate in the area and utilize rail, the freight revenues generated from these new businesses will help to offset some or all of the capital costs associated with the construction of the rail line, depending upon the agreement between the funding agency and the rail operator.

Operating Costs

The operating expenses will increase by approximately $1.5 million as a result of the construction of Segment 5. Specific operating cost changes are predicted to be:

- **Maintenance of Way**: There will be an increase in the maintenance of way costs per mile as a result of the new rail line. Maintenance on the line

will be at least $5,000 per mile, which is based on standard industry costs per mile for Class 2 track.

- **Depreciation**: Depreciation charges associated with the construction of Segment 5.
- **Transportation**: The construction of the rail line will increase fuel expenses to reflect an increase in route mileage. In addition, the new extension to the BNSF line will cause the rail operations to alter, but will not cause an increase in the annual operating expense until business exceeds at least 3,500 to 4,500 carloads per year in this region.
- **General and Administrative**: There will be an increase in the insurance expenses and property taxes as a result of the new construction.

The details of the cost components are provided in **Exhibit 5.10**.

If the industrial properties in the Moses Lake area expand significantly warranting an increase in rail operations, then operating costs (crews, locomotives, fuel, etc.) will increase to reflect the change in operations.

Exhibit 5.10
Annual Incremental Changes in Operating Costs
Construction of Segment 5 to Soap Lake

Operating Cost Category	Base Case	Segment 5 to Soap Lake
Maintenance of Way		$80,000
Depreciation		$1,151,933
Transportation	$404,352	$628,992
General and Administration		$10,000
Total Expenses	$404,352	$1,870,925
Increase in Cost from Base Case		$1,466,573

Break Even Analysis

Were segment 5 to be constructed, traffic levels would have to be increased by approximately:

- 27,435 cars per year with a $50 per car fee added to the transportation charge, or
- 13,717 cars per year with a $100 per car fee added to the transportation charge, or

- 9,145 cars per year with a $150 per car fee added to the transportation charge

for the next thirty years in order to repay the capital costs.

Construction of Segment 5 from the north end of Segment 2 to Quincy

Segment 5b assumes the rail line is extended from the Grant County International Airport northwest to the Port of Quincy. The rail line can be extended only if Segment 2 is completed, but is not dependent upon Segments 1, 3 or 4.

Rail Operations

The extension of the rail line to the BNSF at Port of Quincy will not increase the number of CBRW crews, but will require some changes in operations. The crew(s) will serve the entire line beginning at Warden or Wheeler, continuing through Moses Lake and the Grant County International Airport, and interchange with the BNSF at the Port of Quincy. The crew(s) will be able to switch all on-line customers and interchange traffic in one shift at the current traffic volumes. If the rail business grows at the airport and the other industrial areas, the CBRW may need to increase the number of crews and locomotives.

Economic Analysis

The cost to extend the rail line from the airport to the Port of Quincy is projected to be $69.4 million for the extension only. In order to build this rail line, Segment 2 must be constructed. The total cost of Segment 2 and Segment 5b is $78.8 million.

Operating Costs

The operating expenses will increase by almost $3 million as a result of the construction of Segment 5. Specific operating cost changes are predicted to be:

- **Maintenance of Way**: There will be an increase in the maintenance of way costs per mile as a result of the relocation. Maintenance on the line will be at least $5,000 per mile, which is based on standard industry costs per mile for Class 2 track.
- **Depreciation**: Depreciation charges associated with the rehabilitation of Segment 3.
- **Transportation**: The relocation of the rail line will increase fuel expenses to reflect an increase in route mileage. In addition, the new extension to the BNSF northern line will cause the rail operations to alter,

but will not cause an increase in the annual operating expense until business exceeds at least 3,500 to 4,500 carloads per year in this region.

- **General and Administrative**: There will be an increase in the insurance expenses and property taxes as a result of the new construction.

The details of the cost components are provided in **Exhibit 5.11**.

At this time there are no forecasts for an increase in rail traffic on the proposed Segment 5b. If in the future industrial properties expand significantly warranting an increase in rail operations, then operating costs (crews, locomotives, fuel, etc.) will increase to reflect the change in operations.

Exhibit 5.11
Incremental Changes in Operating Costs
Construction of Segment 5b to Quincy

Operating Cost Category	Base Case	Segment 5 to Quincy
Maintenance of Way		$105,000
Depreciation		$2,625,633
Transportation	$404,352	$646,963
General and Administration		$10,000
Total Expenses	$404,352	$3,387,597
Increase in Cost from Base Case		$2,983,245

Break Even Analysis

Were Segment 5b to be constructed, traffic levels would have to be increased by approximately

- 75,511 cars per year with a $50 per car fee added to the transportation charge, or
- 37,755 cars per year with a $100 per car fee added to the transportation charge, or
- 25,170 cars per year with a $150 per car fee added to the transportation charge

for the next thirty years in order to repay the capital costs.

What are the benefits and drawbacks for each of the segments?

Each segment has its own merits and potential problems. **Exhibit 5.12** presents a qualitative summary of each segment's benefits and drawbacks.

Exhibit 5.12
Segment Benefits and Drawbacks

Benefits	Drawbacks
Construction of Segment 1 and Abandonment of Segment 4	
-Improved public safety downtown Moses Lake -Reduced maintenance on the new rail line in the initial years -New rail line to serve currently undeveloped industrial land, which when developed could improve regional economy -The Moses Lake waterfront would be available for public use	-Public or private investment will not be recovered through freight revenue for the foreseeable future -Existing rail customers located along segment 4 will lose service, and potentially close -New highway/roadway crossings will be added along the new rail line -Customer relocation costs may be required -Capital costs to extend the rail line must be paid by either private or public agencies.
Construction of Segment 1 and Partial Abandonment/Rehab of Segment 4	
-Improved public safety downtown Moses Lake -New rail line to serve currently undeveloped industrial land, which when developed could improve the regional economy -Existing rail customers located along Segment 4 will maintain rail service -The Moses Lake waterfront would be available for public use	-Public or private investment will not be recovered through freight revenue for the foreseeable future -New highway/roadway crossings will be added along the new rail line -Capital costs to extend the rail line must be paid by either private or public agencies.
Rehabilitation of Segment 4	
-Existing rail customers located along Segment 4 will maintain rail service -The cost of rehabilitation is less expensive than constructing a new rail line	-Public or private investment will not be recovered through freight revenue for the foreseeable future -Industrially-zoned land along Wheeler Road will not get rail access/service -Rail line will still run through downtown Moses Lake
Rehabilitate Segment 3	
-Improved rail service and operations	-Capital costs to rehabilitate the line are not supported by any existing freight revenues
Construct Segment 2	
-Rail access to heavy industry sites located at the airport could attract large industries and improve the local economy	-Capital costs to extend the rail line must be paid by either private or public agencies. -All expansion/new business is speculative at this time
Construct Segment 5 or 5b	
-Rail access to heavy industry sites located at the airport could attract large industries and improve the local economy	-Capital costs to extend the rail line must be paid by either private or public agencies. -All expansion/new business is speculative at this time

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Chapter Six: Regulatory Requirements

Prior to implementing and constructing the *Northern Columbia Railroad Project* segments, a number of state and federal regulatory requirements must be completed. In addition, operational and ownership issues also need to be resolved prior to implementation.

What ownership and operational issues need to be resolved prior to implementation of the *Northern Columbia Railroad Project*?

Prior to implementation of the project, it will be necessary for the major stakeholders to negotiate ownership of the new rail lines (Segments 1, 2, 5, and 5b). Leasing and operating agreements will need to be in place prior to construction. Major stakeholders include:

- the state of Washington,
- the port of Moses Lake,
- the city of Moses Lake,
- Grant County,
- private investors/developers, and the
- Columbia Basin Railroad.

What are the ownership options?

Segments 1, 2, 5, and 5b entail the development of new rail lines in the Moses Lake area. Because the ongoing rail operations do not support the proposed capital improvements, funding will have to be provided by either private enterprises (CBRW, BNSF, or local developers) or governmental agencies (state of Washington, federal government, Grant County, Port of Moses Lake, or the city of Moses Lake) or a combination of both.

The following section discusses the potential ownership options for these new rail lines.

Columbia Basin Railroad (CBRW)

The CBRW currently owns and operates the railroad between Wheeler and the Grant County International Airport (GCIA). If the CBRW decided to construct the new rail lines, it would stand to reason that the CBRW would also own and operate the new segments. New construction of one or all of the

new routes would require that the CBRW acquire funds through loans and/or rate increases. Since state law requires that public funding for privately owned short line railroads must be repaid to the state, no grant funds will be available to the CBRW. Projected cash flow from the current and future rail operations will not support the capital investments for any of the segments.

One possible option for the CBRW is to sell the rail line through Moses Lake between MP 13.9 and MP 16.2 to the city or the county and use the proceeds in combination with federal or state loans to relocate the line. The CBRW would own the new section of rail line and continue to provide rail service to the area.

If the CBRW proceeds with the construction of Segments 2 or 5, Segment 3 should be rehabilitated to accommodate the anticipated increase in rail traffic on this section. This will likely cause an increase in freight rates to cover the cost of construction of these segments. An increase in freight rates may drive existing rail business to alternative lower cost options. This diversion will have an additional negative effect on the CBRW's ability to recover the costs of construction.

In conclusion, it is unlikely that the CBRW cannot construct and rehabilitate any of the segments without the commitment of current and future shippers (to cover the costs of improvements).

BNSF Railway Company

The BNSF has indicated that it has no interest in constructing, owning or operating the new rail lines. The BNSF should not be considered a potential owner or operator of the new rail lines.

Private Investors/Local Developers

With the exception of Segment 1, the proposed rail construction of Segments 2 and 5 is highly speculative. There is a clear opportunity for property owners in the GCIA area to construct the new rail segments (2 and 5) in order to attract new businesses to their properties. When the rail volumes warrant it, the private investors can either contract with a third party to operate the rail segments or provide the service themselves. The freight rates to the new businesses or any rail traffic over the new segments could include a fee to the private investor/owners for use of the line.

Washington State

The state of Washington owns several rail lines and recently spent several million dollars acquiring track from the Watco Companies. The state has a history of being involved in rail projects that preserve and expand rail service.

The state can construct and/or acquire any or all of the segments proposed as part of the *Northern Columbia Basin Railroad Project*.

Port of Moses Lake

Revised Code of Washington (RCW) 53.08 gives the Port of Moses Lake the power to construct and operate new rail lines. The Port of Moses Lake could own the new tracks and enter into an operating agreement with the CBRW to maintain the public asset and move freight for the Port district. The Port district does have a taxing authority that could be used to generate funds for rail capital for improvements described in this report.

Rail Segment Construction and Ownership

The construction of Segments 2 and 5 is a long-term strategic decision designed to improve both the local and state economies. However, based on the analysis performed for this study, it does not appear that potential customer revenue would be available to support construction of these rail lines.

The construction of Segment 1 and the abandonment of Segment 4 could provide practical benefits to local residents, as well as the regional economy. However, at this time, and in the immediate future, there would be no potential revenues to offset the construction costs of Segment 1. As such, the Port of Moses Lake, if it decides to build the rail lines, would have to incur the financial risk until future businesses locate in the area and use the rail line.

If and when the businesses locate in the Moses Lake area and begin to utilize the rail lines, the Port could expect to begin to recover some or all of the initial capital investment – either through a flat fee or a flexible fee payment schedule.

Payment Methodology

Payment from users of the rail line can take the form of a flat annual or monthly fee, similar to a mortgage payment, which is independent of the rail traffic on the rail line, or utilize a more flexible payment plan, which would be based on the actual usage of the rail (a per car fee).

The flat fee option reduces the financial risk to the Port and places the risk directly with the contracted users of the rail line. The financial risk to the Port would be limited to the ability of the contracted parties to make the fixed payments.

The flexible payment plan places the financial risk directly on the Port of Moses Lake. Since payments by the using parties to the Port of Moses Lake

are based on usage, if no traffic uses the line, the Port of Moses Lake would receive no payment. The Port would continue to be responsible for the repayment of the capital costs associated with the acquisition/construction of the rail line.

The Port of Moses Lake should look to minimize its financial risk by looking at a flat fee and supplementing these fees with usage fees. The actual usage fee to be charged is a function of what the users are able and willing to pay.

Capital Cost Recovery

The Port of Moses Lake's objectives associated with the acquisition/construction of the rail lines will determine the level of capital cost recovery requirements. The Port of Moses Lake could decide to obtain full recovery of the capital costs over a set period of time, partial recovery of the capital costs, or no recovery of any costs.

In part, the level of recovery is a factor of the Port of Moses Lake's objective, but it is also a part of the ability of the users to pay an appropriate fee for the use of the rail line.

Current rail shippers have established freight rates with the CBRW. These freight rates provide the CBRW with income to offset operating and capital costs associated with rail operations. In a competitive market, the CBRW's profit motive is balanced with the need to offer shippers an attractive freight rate.[18]

In order to encourage the shippers and the CBRW to use the new rail lines, the freight rate charged to the shippers should correspond to the rail service provided. If the rail operations over the new rail lines improve the transit times, rail shippers would experience a decrease in equipment and inventory costs and the CBRW may realize operating savings as a result of the shorter distances traveled. Therefore, both the CBRW and the shippers may be willing to accept freight rate increases in order to experience some of these savings.

If the current rail shippers do not receive higher value service when using the new rail lines, there is no incentive for the rail shippers to use the new line. One of the key findings of this feasibility study is that the shippers would not

[18] *The project team is assuming that the current freight rates negotiated between the shippers and the CBRW are at a level that allows the shippers to be competitive in their industry at this time.*

experience any transit time savings related to the construction of either Segment 2 or 5 (including 5b). The northern BNSF route is close to capacity westbound and unable to handle an increase in the number of trains. The eastbound trains would require that Moses Lake traffic be sorted at either Spokane or backtracked and sorted at Pasco, either of which would actually cause an increase over the existing transit times. There is no basis at this time to suggest the northern connection will improve rail operations in and around Moses Lake.

Calculation of Usage Fees

The annual usage fee required of the Port of Moses Lake would be dependent upon the terms of the repayment. **Exhibits 6.1** summarizes the minimum usage fees that would be required by the Port of Moses Lake in order to cover the full costs of constructing either Segment 1 (with Segment 4 abandonment), Segment 2, or Segment 5 (including 5b) assuming a thirty-year payback at a 3.5 percent interest rate.

If the Port of Moses Lake constructs Segment 1, the annual recovery fee would be approximately $538,000 per year. Construction of Segment 2 would require a minimum recovery fee of approximately $507,000. Construction of Segment 5 would require a minimum annual payment of $1.3 million per year.

Exhibit 6.1
Full Recovery of Capital Costs

Usage Fee Calculation	Segment 1 (with Segment 4 abandonment)	Segment 2 (east side of GCIA)	Segment 3 (rehabilitation of GCIA rail line)	Segment 5 (to Soap Lake)	Segment 5b (to Quincy)
Total Segment Cost	$9,907,000	$1,844,000	$1,844,000	$25,229,000	$69,440,000
Annualized Cost	$538,657	$507,023	$100,261	$1,371,734	$3,775,545
Monthly Cost	$44,888	$42,269	$8,355	$114,311	$314.629
Annual Required Carloads to Cover Costs					
@ $50/car fee	10,773	10,145	2,005	27,435	75,511
@ $100/car fee	5,387	5,072	1,003	13,717	37,755
@ $150/car fee	3,591	3,382	668	9,145	25,170

Construction of Segment 5b to Soap Lake would require a minimum of $3.8 million per year. For either Segment 5 scenario, the annual payment fee amount for Segment 2 must also be taken into consideration.

Determination of Appropriate Fee to be Paid by User

The level of construction costs associated with each segment cannot be assumed by the rail operator, and subsequently the shippers, through usage fees. As discussed earlier, the rail rates to the shippers must remain competitive and therefore must remain within an appropriate range that reflects the rail service provided. Usage of one or all of the new rail lines by businesses located in the Moses Lake area cannot exceed $50 to $150 per loaded car.

Exhibit 6.1 provides a summary of the estimated number of cars required to move over one or more of the new rail lines in order to cover the annual payment related to construction costs.

Assuming an average freight rate increase of $100 per car, over 38,000 carloads would be required to cover the annual costs to construct Segment 5b to Quincy. At the $100 per car fee, 5,400 carloads would be required to cover the costs for Segment 1 (with the abandonment of Segment 4). Based on information obtained through interviews for this analysis, it is unlikely that these traffic levels could be achieved either now or in the near future.

The Port of Moses Lake should assume that additional sources of funds will be required to support the construction of the Segments.

What regulatory requirements pertain to the *Northern Columbia Basin Railroad Project*?

Rail operations and construction are regulated and monitored by various state and federal agencies. In addition, if public funds are used to construct new rail lines, then additional federal regulations may also apply to the *Northern Columbia Basin Railroad Project*. The following provides a summary of potential federal, state, and local regulatory requirements which may need to be followed as the project moves forward.

Surface Transportation Board (STB)

The Surface Transportation Board is a federal regulatory agency that oversees the operation of railroads – including the introduction of new lines, new service, and abandonment. Based on the project team's research, it is likely that at least three applications to the STB will likely be necessary.

The purpose of the first application would be to get approval of the new rail construction and/or trackage rights (and an individual exemption from the regular, more burdensome, procedural rules for STB approval under 49 U.S.C. §10901.) Depending upon the timing of implementation of Segments 1, 2 or 5, more than one application may be required. (No application would be required for the Segment 3 track rehabilitation.)

If the new track and right-of-way is to be owned by the Port of Moses Lake, then either the Port (if it is going to operate the line as a carrier itself) or the carrier that will be leasing the operating rights will need to apply for a certificate of public convenience and necessity from the STB. This application is covered by a class exemption from the more burdensome pre-approval rules and will become effective seven days after the Notice of Exemption is filed, subject only to an after-the-fact Board review if objections are received.[19]

Once construction of the new track is complete, then a petition to abandon the obsolete track and receive an individual exemption from the regular abandonment procedures under 49 U.S.C. §10903 may be filed.[20] This filing fee costs $5,200 payable by the railroad operator, and will become effective thirty days after the Notice of Exemption is published in the Federal Register, subject only to a Board review if objections are received.

At the time of application for authorization for rail construction, all directly related applications are also required to be filed concurrently.

Estimated Application and License Costs

STB application fees, as they pertain to the *Northern Columbia Basin Railroad Project,* are as follows:

- Application for new rail line/trackage rights: $60,800 filing fee;
- Certificate of public conveyance and necessity: $1,500 filing fee; and
- Petition to abandon: $5,200 filing fee.

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[19] *Where proper objections are filed, the STB approval may later be revoked (if the STB determines its regulatory scrutiny is necessary) or treated as void (if the exemption notice is found by the STB to have contained false or misleading information). 49 C.F.R. §1150.32; Riverview Trenton Railroad Company, STB Finance Docket No. 34040, 2003 WL 21108179 (2003).*

[20] *The less complicated and less expensive ($3000 filing fee) "class exemption" process under 49 C.F.R. §1152.50 is only available where the carrier certifies that no local traffic has moved over the line to be abandoned during the last two years.*

However, filing fees are waived for an application or other proceeding which is filed by a state or local government entity.

Estimated Timeline

Depending upon the type and number of STB applications required, the timeline could take anywhere from six months to a year, in addition to the required environmental process.

Washington Utilities and Transportation Commission (WUTC)

The proposed rail lines will cross several roads. The Washington Utilities and Transportation Commission must approve creation of rail/highway crossings before they are constructed. It will specify the safety devices and warning systems that must be installed at each crossing.

Estimated Petition Costs

There is no fee for filing a petition to the WUTC.

Estimated Timeline

Past experience indicates that it takes the Commission from one to three months to process a petition or group of related petitions. Design engineers can reduce the uncertainty about what the Commission may require by performing diagnostic evaluations with Commission staff before filing the petitions.

Environmental Documentation

Two environmental laws govern development within Washington State: the *State Environmental Policy Act* (SEPA) and the *National Environmental Policy Act* (NEPA). Both of these regulations require that environmental analysis be performed to ensure that minimal (or no) harm will come to the human, physical, or biological environment. Each of these regulations has their own documentation requirements, depending upon the project.

National Environmental Policy Act (NEPA) Requirements

Pursuant to the *National Environmental Policy Act*, any federal action requires compliance with NEPA. A federal action can either be a project which is:

- implemented by a federal agency;
- requires a federal permit or approval;
- funded by a federal agency; or
- located on federal property.

If it is determined that the Surface Transportation Board (STB) has jurisdiction over the *Northern Columbia Basin Railroad Project*, then a federal action is initiated. Therefore NEPA compliance is required.

In addition, if federal funding for construction is obtained, other environmental regulations, pursuant to the federal funding agencies' guidelines, will also be required.

Surface Transportation Board

The Surface Transportation Board has several different approaches to completing the required NEPA analysis and documentation, depending on the type of project, expected complexity and desires of the applicant.

One approach, which generally follows the process outlined in the STB environmental rules, has the applicant prepare and submit an *Environmental Report* and a *Historic Report* as part of the *Application or Petition for an Exemption*. Depending on the project, and the quality of the environmental report, STB will either:

- complete the NEPA process and document in-house; or
- have the applicant retain a third party consultant to complete the NEPA process and document.

STB's rules require substantial agency coordination as part of the development of the *Environmental Report*. However, STB has found that pre-coordination by the applicant with the various federal resource agencies can create some confusion and redundancy since STB must also coordinate with the same set of agencies after the *Environmental Report* is filed as part of their NEPA responsibility.

A second approach is to have the applicant request a waiver of the *Environmental Report* requirement and instead participate in the STB agency and public scoping process and prepare a *Preliminary Draft Environmental Assessment* (PDEA). The PDEA normally is submitted after the *Application or Petition for an Exemption* and requires only one coordinated round of agency contacts. Following the filing of the PDEA, STB will then verify the PDEA and publish the *Environmental Assessment*. This could require the hiring of a third party consultant to provide STB with the staff support necessary to complete the process. One benefit of this process is that it allows the applicant to manage the cost and schedule for the bulk of the environmental review. However, because of the wording in the NEPA regulations [40 CFR 1506.5 (b) and (c)], STB will only allow the applicant to

prepare a PDEA and will not let the applicant prepare a preliminary document if the project requires an *Environmental Impact Statement* (EIS).

A final approach that is used is that the applicant requests a waiver of the *Environmental Report* requirement and engages the services of an independent third party consultant to support STB. At STB's direction, the third party completes the NEPA analysis and prepares the NEPA document. The applicant's primary role is to respond to requests for information from STB. This process has fewer parties involved, but limits the ability of the applicant to manage the cost and schedule of the NEPA process.

Federal Funding

If federal funding becomes available for the *Northern Columbia Basin Railroad Project*, it is likely that the earmark will either be distributed via the Federal Highway Administration (FHWA) or the Federal Railroad Administration (FRA). The federal funding will require NEPA compliance. Coordination with STB and the federal funding agency will be required to determine which environmental guidelines would be followed, and which federal agency would be the lead agency.

One important consideration regarding federal funding and NEPA pertains to the acquisition of right-of-way. If funding is provided by either FHWA or FRA, then right-of-way cannot be purchased until the NEPA process has been completed. This requirement is pursuant to 23 CFR 771.305 which states:

> "The National Environmental Policy Act (NEPA) process, as described in FHWA's NEPA regulations in 23 CFR part 771, normally must be conducted and concluded with a record of decision (ROD) or equivalent before Federal funds can be placed under agreement for acquisition of right-of-way."

However, pursuant to 23 CFR 710.502, under certain, very limited circumstances, FHWA/FRA do permit the purchase of right-of-way prior to the completion of the NEPA document. The regulations state:

> (a) *General conditions.* Prior to the STD [State Transportation Department] obtaining final environmental approval, the STD may request FHWA agreement to provide reimbursement for advance acquisition of a particular parcel or a limited number of parcels, to prevent imminent development and increased costs on the preferred location (Protective Buying), or to alleviate hardship to a property owner or owners on the preferred location (Hardship Acquisition), provided the following conditions are met:

(1) The project is included in the currently approved STIP;

(2) The STD has complied with applicable public involvement requirements in 23 CFR parts 450 and 771;

(3) A determination has been completed for any property subject to the provisions of 23 U.S.C. 138; and

(4) Procedures of the Advisory Council on Historic Preservation are completed for properties subject to 16 U.S.C. 470(f) (historic properties).

(b) *Protective buying.* The STD must clearly demonstrate that development of the property is imminent and such development would limit future transportation choices. A significant increase in cost may be considered as an element justifying a protective purchase.

(c) *Hardship acquisitions.* The STD must accept and concur in a request for a hardship acquisition based on a property owner's written submission that:

(1) Supports the hardship acquisition by providing justification, on the basis of health, safety or financial reasons, that remaining in the property poses an undue hardship compared to others; and

(2) Documents an inability to sell the property because of the impending project, at fair market value, within a time period that is typical for properties not impacted by the impending project.

(d) *Environmental decisions.* Acquisition of property under this section shall not influence the environmental assessment of a project, including the decision relative to the need to construct the project or the selection of a specific location.

Once federal funding sources are secured, it will be the responsibility of the project proponent to work with FHWA or FRA to determine the right-of-way acquisition requirements and process.

State Environmental Policy Act (SEPA) Requirements

The *State Environmental Policy Act* (SEPA) requires that an environmental review be prepared for projects which may have substantial impacts. Under SEPA, a number of projects are exempt from this analysis. However, the construction of a rail line is not exempt. It is therefore anticipated that the project proponent, at a minimum, would be required to complete a SEPA checklist. If a NEPA document is also prepared, the project proponent can adopt the NEPA document to fulfill its SEPA obligations.

State Funding

Similar to federal regulations, SEPA has guidelines related to the completion of the environmental document and the purchase of right-of-way. Pursuant to WAC 197-11-704(2)(a)(ii), an agency action includes a decision to:

> "Purchase, sell, lease, transfer, or exchange natural resources, including publicly owned land, whether or not the environment is directly modified."

As such,

> "No agency action can be taken until a final determination of nonsignificance or a final environmental impact statement has been issued." (WAC 197-11-070)

However, some real property transactions are exempt from SEPA and this requirement, including the purchase or acquisition of any right to real property (WAC 197-11-800(5). However, this exemption does not apply when the acquisition is part of a larger proposal (WAC 197-11-305). Therefore, if the purchase of the right-of-way and the construction of a new rail line are interdependent pieces of a proposal, they must then be evaluated in a single environmental document.

The SEPA lead agency will need to make the final decision about the interdependency of the land purchase and the railroad construction, and whether both segments will need to be evaluated in a single document.

Estimated Environmental Documentation Costs

Depending upon whether all new rail line segments are included in one environmental document, as well as what type of environmental document is prepared, the costs could vary considerably. It is estimated that the cost of the NEPA/SEPA environmental documentation could range from $300,000 to $1 million.

Estimated Timeline

Beginning with project scoping through the final ruling (a Record of Decision (ROD) if an Environmental Impact is prepared or a Finding of No Significant Impact (FONSI) if an Environmental Assessment is prepared), the joint NEPA/SEPA process could take from 18 to 36 months.

Environmental Permits

In addition to NEPA and SEPA compliance, a project must adhere to specific laws and ordinances at the federal, state and local levels. The following list of permits is general and not intended to be all-inclusive. As project design and environmental analysis moves forward, more specific permit requirements will be identified. Specific elements of project design will trigger or not trigger the need for certain permits.

Endangered Species Act

Because this project has a federal nexus (STB jurisdiction and potential federal funding), it must comply with the Endangered Species Act (ESA). Completion of a Biological Assessment (BA) will be required.

A BA requires the evaluation of project elements, including:

- direct impacts to habitat;
- secondary impacts to habitat elements that could result from aspects of the design such as storm water treatment and operations; and
- indirect or interdependent effects that could result from increased roadway capacity, or increased growth that results from the project.

The primary goal of the assessment is to determine how the project (and its construction) will affect listed species of threatened or endangered plants or animals protected under the federal ***Endangered Species Act*** (ESA). This analysis results in an "Effect Determination" which states clearly how the proposed activity will positively or negatively affect the listed species that occur in the project vicinity. The BA also identifies specific project activities that must be implemented for the effect determination to remain valid.

Determination and Consultation

The project impacts may be so minor as to warrant a *No Effect Letter*. This letter does not go to the federal resource agencies for concurrence, but is reviewed by STB (assuming STB is the lead federal agency). A *No Effect Letter* can take a week to a month depending on workload.

However, if it is determined that the project will have an adverse effect, STB will submit the BA to the National Marine Fisheries Service and the U.S. Fish and Wildlife Service (collectively referred to as 'the services'). A review for a BA can take four to six months with the services, depending on their workload.

Potential Federal Permits

It is anticipated that in-water work will be required for Segment 1. This will require a Section 404 Permit from the U.S. Army Corps of Engineers (Corps). The Corps administers the *Clean Water Act*, and Section 404 is the section that regulates authorized fill within waters of the United States, including wetlands. A Section 404 permit will require that impacts to natural wetland functions be mitigated.

Soil-disturbing activity, including new construction or track rehabilitation, will trigger the need for a National Pollutant Discharge Elimination System (NPDES) general construction permit. The Washington Department of Ecology administers this program and will issue the permit. This permit oversees erosion control activities and best management practices related to construction. This approval is required for land disturbing activity for construction at sites greater than one acre.

Potential State Permits

In-water work expected under Segment 1 will also require a Section 401 Certification. This permit is issued by the Washington Department of Ecology. Ecology may also place mitigation requirements on the applicant for the 404 permit through the 401 Certification process.

Impacts, such as rail construction within 200-feet of Moses Lake and the water body crossing of Parker Horn will trigger a Shoreline Substantial Development Permit. This permit is issued by the local agency (the city of Moses Lake) and then also approved by Ecology. This approval could also require mitigation for natural resource impacts.

Potential County and Local Government Approvals

Soil-disturbing activity, including new construction or track rehabilitation, will trigger a review by the city of Moses Lake and Grant County. These local agencies will issue grading permits for construction.

In-water work expected for Segment 1 will also require permits from the city of Moses Lake. The city of Moses Lake has environmental ordinance restrictions concerning impacts to wetlands. These rules require mitigation for impacts.

All work within 200 feet and including Moses Lake for Segment 1 activities will also be subject to regulation under the city of Moses Lake Shoreline Management regulations (Ord. 2144, 12/9/03). A Shoreline Substantial

Development Permit would likely be issued by the city and then this permit would be approved by Ecology.

Estimated Permit Costs

Environmental permit fees and associated mitigation have been included as part of the capital cost estimates presented earlier in this document.

Estimated Timeline

STB typically prepares the Biological Assessment in conjunction with the NEPA document; however, a ROD or FONSI cannot be issued until consultation with the services is complete. As such, the timeline for an Environmental Assessment or an Environmental Impact Statement could be lengthened by as much as six months depending upon consultation with the services, to a total of 24 to 42 months.

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Chapter Seven: Implementation Process

Prior to actual construction and operation of the *Northern Columbia Basin Railroad Project*, a number of steps need to be undertaken and completed. The general process for implementation of this project includes:

1. Determine ownership and operating arrangements for new rail lines as well as ownership of Segment 3. This information will be required for application to the Surface Transportation Board. Begin discussions with property owners.
2. Initiate STB application process, including *National Environmental Policy Act* (NEPA) and *State Environmental Policy Act* (SEPA) environmental documentation and *Endangered Species Act* (ESA) compliance.
3. Based upon environmental findings, pursue and secure additional funding.
4. Purchase/negotiate right-of-way.
5. Prepare final design and construction permits.
6. Begin construction.

It is anticipated that steps 1 through 6 above could take anywhere from two and a half to four years, depending upon the type and extent of the environmental documentation and ESA requirements.

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Glossary

Active warning device Flashing lights and/or gates used at grade crossings.

Advance warning signals A sign used along a roadway to warn that a roadway-rail grade crossing is ahead.

At-grade crossing The surface where the rail and a roadway (or pathway) cross at the same level.

Ballast Material selected for placement on the roadbed for the purpose of holding the track in place.

Bypass A track that goes around other rail facilities (bypasses them) or provides a more direct route between two points. A bypass may be as simple as a track that goes around a small yard, or may be as significant as a complete route revision.

Capital costs Non-recurring costs required to construct (or improve) the rail line. Capital costs include the purchase of vehicles, track improvements, station rehabilitation, and design and administrative costs associated with these improvements.

Centralized Traffic Control An electronic system that uses remote controls to change signals and switches along a designated portion of railroad track.

Chokepoint An area along the railroad track that has less capacity than the adjoining tracks, resulting in congestion. This makes it difficult for trains to pass uninterrupted.

Consist The number of vehicles forming a train.

Continuous welded rail Rails welded together in lengths of 400 feet or more.

Crossover (and Power crossover) A set of turnouts connecting multiple tracks. A crossover allows a train to move from one track to another. A power crossover may be controlled by Centralized Traffic Control.

Deficiencies Areas along the track that cannot handle expected increased train frequencies.

Derail (and Power Derail) A safety device on the track strategically located that when positioned, intentionally guides runaway rolling stock off the track to protect against collisions. A power derail may be operated by Centralized Traffic Control.

Dispatcher The individual who plans and controls the movement of trains.

Double track Two sets of main line track located side by side, most often used for travel in opposite directions, like roadways.

Environmental Assessment (EA) An environmental analysis prepared pursuant to the National Environmental Policy Act (NEPA) to determine whether a federal action (or project with federal investment) would significantly affect the environment and thus require a more detailed environmental impact statement.

Environmental Impact Statement (EIS) A document required by federal and state agencies under the National Environmental Policy Act (NEPA) and Washington State's Environmental Policy Act (SEPA). An EIS is required for major projects or legislative proposals that may significantly affect the environment. A tool for decision making, it describes the positive and negative effects of the undertaking and identifies alternative actions.

Fill sections Depositing of dirt, mud, or other materials into aquatic areas to create more dry land.

Flashing light signals Used with the crossbuck signs at railroad crossings. When the lights are flashing, the motorist or pedestrian must stop.

Gates Used with flashing signals at certain crossings to warn that a train is approaching.

Geometrics An engineering term that refers to the design of the tracks.

Grade crossing The area along the track where a roadway or pathway crosses.

Grade-separated Crossing lines of traffic that are vertically separated from each other (i.e., a roadway that goes over a railroad track).

Habitat The place where a population (human, animal, or plant) lives and its surroundings.

Hazardous materials Material, often waste, that poses a threat to human health and/or the environment. Typical hazardous substances are toxic, corrosive, explosive, or chemically reactive.

Intermodal The use of different types of transportation modes to move freight shipments and people, i.e. ships, trains, buses, and trucks.

Lock switch (and Electric lock switch) Operated by Centralized Traffic Control to regulate when trains can enter on or off the tracks. An electro-mechanical device that prevents movement of a hand throw switch when a train is approaching

Main line (Mainline) A railroad's primary track that usually extends great distances. It usually carries both freight and passenger trains.

Meet A meet is the location where two trains traveling in opposite directions pass one another. Additional tracks and/or crossovers may need to be placed near these locations so that trains can maintain speeds and schedule reliability.

Mitigation Measures taken to reduce adverse impacts on the environment.

National Pollution Elimination Discharge System (NPDES) A provision of the Clean Water Act that prohibits discharge of pollution into waters of the United States unless a special permit is issued by the U.S. Environmental Protection Agency, a state agency, or where delegated, a tribal government.

Operating costs Recurring costs of operating passenger service. These costs include wages, maintenance of facilities and equipment, fuel, supplies, employee benefits, insurance, taxes, marketing, and other administrative costs.

Passive warning device Signs or markers used at all grade crossings.

Pavement markings Painted on the pavement in advance of a railroad highway crossing, to warn the motorist or pedestrian of the rail crossing.

Positive train separation A new railroad safety system, using high tech equipment to prevent train collisions.

Rail yard A system of tracks within defined limits, designed for storing, cleaning, and assembling (to each other) rail cars.

Railroad crossbuck A type of sign found at all public railroad crossings. This sign should be treated as a yield sign.

Railroad tie The part of the track, often wood or concrete, where the rails are spiked or otherwise fastened.

Right-of-way The horizontal and vertical space occupied by the rail service.

Siding An auxiliary track located next to a main line that allows a train to move out of the way of an oncoming train. Sidings are also used to store trains or to add/subtract rail cars.

Switch The component of a turnout consisting of switch rails and connecting parts providing the means for making a path over which to transfer rolling stock from one track to another. The switch may be thrown manually or electronically.

Travel time The elapsed time between a trip's beginning and end. It includes travel, transfers, and waiting time.

Turnout A track arrangement that connects tracks, allowing movement from one to another.

Wetland An area saturated by surface or groundwater with vegetation adapted for life under those soil conditions. Examples of wetlands are swamps, bogs, and estuaries.

Yard limits An area where locomotives may enter the main tracks under simplified conditions without authority from the dispatcher.

Appendices

Northern Columbia Basin Rail Project

Appendix A

Industrial Location Factors

Northern Columbia Basin Rail Project

Appendix A
Industrial Location Factors for Moses Lake, WA

This appendix summarizes the key generic factors that firms and site location professionals look for when considering moving to or expanding operations. The appendix includes a comparison of these generic factors to the specific characteristics found in Grant County and, particularly, within the area around Moses Lake. It concludes with a discussion of those factors and the potential for Moses Lake to attract industry, based on an assessment of Moses Lake's advantages and an interview with Mr. Terry Brewer, Executive Director of the Grant County Economic Development Council, conducted via telephone, in February 2006.

How do companies decide where to locate a new facility, or expand an existing facility?

When searching for new or expansion facility sites, manufacturing industries and chemical and agricultural processing companies face a daunting challenge: to find the optimal set of tradeoffs for their business, based on a complex set of location factors that can themselves fluctuate in a given location, over time. However, localities seeking to attract new industry face an even bigger hurdle: how to win economic opportunities and jobs in an extremely competitive market. According to International Economic Development Council (IEDC) figures, more than 15,000 localities compete for approximately 100-200 locations that occur annually. Localities such as Moses Lake must identify (or create) and effectively market a set of advantages that may be compared with others across the nation, and sometimes globally—although most locations occur within the same region, and nearly two thirds of them are expansions of existing businesses, according to IEDC research. [1]

Notwithstanding such average-skewing factors as prestigious locations, site location specialists focus on a typical set of generic factors which they later refine with their own peculiar business-specific criteria to arrive at the best location possible. So, while no universal set of criteria can be used to guarantee success in attracting or retaining industry in a specific location, the key factors for most industries are:

- Proximity to major population centers

[1] http://www.iedconline.org site selection information accessed on February 20, 2006.

- Adequate land supply
- Transportation (highway/interstate, rail and/or port access, depending on the specific needs of the industry)
- Low cost, reliable and abundant energy supply
- Industry-friendly workforce characteristics
- Local and state incentives

To some extent, certain industries are able to substitute one key factor for another. For example, proximity to raw materials may compensate for less-than-optimal transportation access. Likewise, telecommunications infrastructure might allow an industry to choose a relatively remote location it previously could not have considered. Environmentally sensitive industries might be willing to accept more regulation in exchange for cleaner air and water needed as industrial inputs. While many firms look for areas of relatively high unemployment to ensure an eager workforce, there are instances in which housing affordability draws suitable workers in numbers sufficient to dampen the importance of the local rate of unemployment. And in some cases, the lower wages of a smaller rural workforce might be more attractive to industry than the higher wages associated with the larger pool of urban workers. Workforce quality is another factor, and rural/urban tradeoffs are not always straightforward and they differ from industry to industry.

Relevant data for Moses Lake and comparable Washington State/US national data is from the 2000 US Census, and can be accessed from the Grant County Economic Development Council website.

Exhibit A.1
Comparison of Moses Lake Features to Generic Site Location Factors

GENERAL SITE LOCATION FACTOR	WHY IS IT IMPORTANT?	DOES MOSES LAKE HAVE IT?
Location Either In or very near to population centers of more than 1 Million; alternatively, near factors of production or efficient transportation network.	Access to markets and workforce, or, alternatively, access to manufacturing or process inputs, sufficient acreage, energy supply and/or direct access to transportation	No. Moses Lake, with a population of 16,340 in 2005 must attract and retain industries based on other competitive advantages, including uncongested intermodal transportation system.
Land Low cost land supply, suitable for industrial or manufacturing development. Generally well-drained, level (no more than 5% slope per Chapin (1979); outside floodplains is required. Note that land assembly	A variety of site options in terms of land assembly and site size is critical to the ability to develop optimal site plans for individual industries. This is also key for future expansion, as well as potentially beneficial co-location of related industry.	Yes. the Airport has available a 2,000 acre industrial park, with low-cost readily-available land. Several dozen industrial acreages are listed as available on the Grant County Economic Development Council site, ranging from 3 to

GENERAL SITE LOCATION FACTOR	WHY IS IT IMPORTANT?	DOES MOSES LAKE HAVE IT?
requirements vary by industry and by type of development (i.e., industrial park vs. firm headquarters, etc.) Lack of topographical fatal flaws (e.g., rock ledge, water, peat, soft ground). Site size requirements vary widely, based on industrial classification and specific firm operations.		395 acres zoned for industrial park development. Larger sites are often available for division into smaller segments to suit firm needs. Some developers offer these in trade for income property. These sites are located anywhere from highway/ freeway adjacent to 6 miles distant from I-90. Some offer I-90 or SR-17 visibility. Many are or can be included in the Foreign trade zone, near Grant County International Airport. Currently (2006) advertised sales prices for parcels range from $9,150/acre (no buildings) to $13,000/acre acre, (with buildings).
Facilities and Buildings Availability of appropriately designed shell buildings, loading docks, power supplies, etc.	Though not essential, existing shells can reduce firms' up-front time and expense of locating new industrial/processing operations.	Numerous existing buildings are available for use or adaptive reuse. Some include basic utilities, fiber optics telecommunications for non-specific use; others have specialized facilities such as hangar space. Moses Lake is also offering for sale or lease the 3-building, 53,000 sf Convention Center Plaza for sale, complete with golf course, paving and landscaping on 60 acres.
Intermodal Facilities	The ability to transfer shipments from one mode to another (rail/truck/ship/air) efficiently and cheaply is an ever-increasing market advantage.	The Port of Moses Lake has no intermodal facility.
Roadway Access: Direct or near-direct access to expressway, highway, major interstate	Note that frontage or service roads are often required in addition to freeway, interstate or highway access.	Proximity to Interstate 90, State Route 17, frontage road, in various combinations, are features of many of the available industrial sites in Moses Lake.
Rail Access	Access to a national rail network; with competitive pricing (i.e., at least two Class 1 railroads) is critical to some industries.	One short line, Columbia Basin Railroad is available to Moses Lake firms which connects to the BNSF national network at Connell.

GENERAL SITE LOCATION FACTOR	WHY IS IT IMPORTANT?	DOES MOSES LAKE HAVE IT?
Airport Access	Critical to some industries. Also attractive to executives and workforce. Chapin (1979) notes that land near airports should be reserved for firms that require air service.	Yes. Grant County International Airport is located just north of Moses Lake (13,500 foot long runway); air passenger/cargo service Some sites for sale have existing concrete hardstands for 747s, direct main runway access, etc, at Grant County international Airport.
Port Access	Critical to some industries.	Port access is available at Connel via rail, indirect.
Workforce—Unemployment and Wage Rates	Unemployed workforce is a resource that can be captured by industry. Wage rates affect the cost of production.	Grant County workers number upwards of 40,000. City of Moses Lake unemployment rate is 6.4%, compared to US/WA state. Median earnings for full-time male workers is $34,945; for females it's $25,193. Average manufacturing salary in Grant County in 2001 was $28,522.
Workforce—Education and Training Levels	The quality of the workforce in terms of education and training is important to some (not all) industries.	Most existing area employers indicated they had no problem with quantity or quality of workforce. Grant County offers a job skills program,; the Workforce Development Council subsidizes worker training programs. Big Bend Community College offers specialized training courses.
Nearby Affordable Housing	Permits low- and moderate-wage workers to live near industrial worksites.	Housing is more affordable than any other Washington county: 2004 median home prices in Grant County were less than half that of Washington State as a whole ($106,400 and $224,000, respectively). 2005 median home price was $115,000, with an affordability index of 169.4—highest in the state, indicated more affordability for median income families.
Existence of comprehensive industrial planning	Helps ensure a stable and predictable planning and regulatory environment; minimizes industry conflicts with	Grant County Economic Development Council provides a development framework for

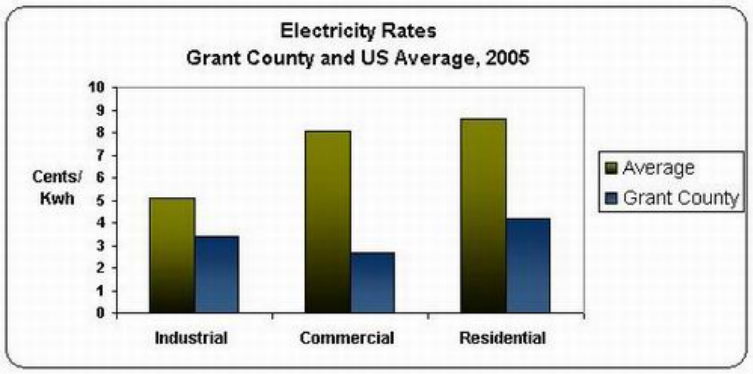
GENERAL SITE LOCATION FACTOR	WHY IS IT IMPORTANT?	DOES MOSES LAKE HAVE IT?
	surrounding uses. Can reduce location costs and time to implement, through one-stop permitting or other permit streamlining processes.	Moses Lake that strongly encourages sites to locate there.
Supportive community attitudes toward industry	Favorable business climate supports business decision to locate, and can encourage local government in its efforts to provide relocating or expanding industries with tax incentives or other economic benefits packages.	Yes.
Local or State Economic Incentives	States and localities are in stiff competition to attract new jobs. Incentives can often tip the scales toward a specific location.	Grant County qualifies for many economic development programs available to WA. State rural counties, including grants, loans, tax credits, tax deferrals and waivers.
Existence of specific types of Industries established within or moving into the area	Co-location of related industries can reduce materials costs, shipping costs and production time.	Existing and potential mini-clusters of related industries include food processing and renewable energy production or related industries.
Water Quality and Availability	Valuable as an input to agricultural processing and other industrial manufacturing, as well as important to future growth and quality of life.	US Bureau of Reclamation's Columbia Basin Irrigation Project supplies dependable water for agriculture. Many sites for sale have irrigable acres and/or are currently farmed with pivot irrigation. Water, power and wastewater is typically available at the industrial acreage for sale in the Moses Lake area..
Air quality	Air quality is important to health, can help attract and retain workers and their families, and can impact sensitive industries' bottom line.	Not applicable/not a problem in the area.
Adequate waste disposal/sewage facilities	Essential part of all industrial processes.	Available.
Telecommunications Infrastructure	Adequate high-speed telecommunications infrastructure is a requirement of many industry sectors.	Existing, or easily established.
Climate Needs vary by sector—e.g., agricultural processing firms might require a long growing season.	Temperate or mild season is important for some food processing industries.	The region offers agricultural processors nearby farmland with a long growing season.
Nearby industrial inputs.	Availability of site- and industry-specific	Moses Lake has nearby

GENERAL SITE LOCATION FACTOR	WHY IS IT IMPORTANT?	DOES MOSES LAKE HAVE IT?
	production inputs can reduce production costs.	resources for some industries (e.g., area crops for agricultural processing, sand/gravel for architectural coatings)
Energy Costs	Availability of low cost energy is often an essential factor for industries.	The Moses Lake area has abundant electric energy at very low costs—between 2 and 3 cents per kilowatt hour for commercial and industrial uses. With two hydroelectric plants supplying the area, industry can rely on this relatively cheap source of power now and into the future.

How does the Moses Lake area score on the generic location factors most important to industry?

Though they differ from sector to sector and from firm to firm, the key industrial location decisions continue to be based on land availability, transportation, utilities and workforce.

Exhibit A.2
Grant County Electricity Rates, Compared to US Average



Source: Grant County Public Utility District website, http://www.gcpud.org/

Energy Cost & Availability

A key advantage of the Moses Lake area is the availability of abundant electric energy at very low costs—between 2 and 3 cents per kilowatt hour for commercial and industrial uses. With two hydroelectric plants supplying the area, industry can rely on this relatively cheap source of power now and into the future. This advantage will only increase as petroleum and coal increase in cost as supplies dwindle and demand increases.

Access: Highway, Rail, Airport and Port Facilities

Access to a Class 1 railroad (at Connell), an interstate (I-90), a highway (SR-217) and an international airport, the apparent remoteness of Moses Lake diminishes as a concern for many firms. As urban congestion grows, the location in rural Grant County could become increasingly competitive.

Suitable, Affordable Land for Large Footprint Users

Moses Lake offers firms a wide variety of land, with utilities, often with telecommunications and warehouse or other specialized facilities already built and ready to go. Although prices vary and are often subject to negotiation and inclusive of tax and incentive packages that make apples-to-apples comparisons difficult, the following sites are currently for sale or lease (February 2006) and provide data to compare to other regions:

- 18,862 sq. ft. former electronic components concrete tilt-up building, near the Grant County International Airport, with rail access, worker parking, internal offices, assembly sites and wired for broadband is

offered for lease at $4,750 per month, including the 12.84 % Washington State Leasehold Tax. This equates to a monthly lease rate of 25 cents per square foot.

- 52 acres of vacant heavy industrial land, adjacent to Grant County International Airport, with utilities to the property line, access to a frontage road and natural gas within 1 mile is for sale at $475,500, or approximately $9,150 per acre.

What does recent experience reveal about the ability of Moses Lake and Grant County to retain or attract firms and industry sectors?

Primary Areas of Advantage

According to Grant County Economic Development Council (GCEDC) Executive Director Terry Brewer, low-cost hydroelectric power has been a key factor in the location decisions of several new industries. Interviews with stakeholders and company executives confirm this observation.

The Importance of Rail to Moses Lake Employers

Mr. Brewer believes that a handful of existing manufacturing companies might consider rail as an alternative to trucking. He helped facilitate shared rail siding access for a brick and artificial stone processing plant at the Quincy intermodal facility, which connects to the BNSF main line. However, Mr. Brewer does not believe there is demand for rail to the north. The southern CBRW connection to the BNSF line appears to offer the best mobility opportunity and most useful connectivity for existing as well as likely future customers.

Agricultural Processing Industry Cluster

Grant County is the top Washington State producer of edible beans, green peas, onions and sweet corn[2] and has attracted more than two dozen companies already, employing approximately 5,000 people. Terry Brewer, Executive Director of the Grant County Economic Development Council International Airport and Industrial Park provides service to many firms and individuals. A favorable climate, abundant and reliable irrigation, low energy for processing plants and equidistant access to the consumer markets of Seattle, Spokane and Portland, have helped create a cluster of related food processing industries, and build up a local, skilled workforce to support it. This "agglomerative economy" now helps further efforts by Mr. Brewer's development office to entice similar or related firms.

[2] Grant County Economic Development Council brochure

Potential New Industries: Playing to Moses Lake's Strengths—Food and Energy

Mr. Brewer reports renewed interest on the part of manufacturing and processing plants in locating within the Moses Lake area. He attributes the approximate dozen bona fide new inquiries occurring within the past 18 months to an upswing in the local and national economy over the past several years. Currently (spring 2006) there are several industries considering or negotiating to locate in the Moses Lake area. They include:

- Guardian Industries
- Moses Lake Ethanol
- Specialty Chemical Company
- REC Silicon (expansion of existing local plant)
- Biodiesel, Data Centers

Mr. Brewer believes that in addition to any industries needing cheap electricity, Moses Lake provides advantages to agricultural process firm location or expansion, and this augurs well for the development of a renewable energy/alternative energy industry cluster.

Disadavantages: Too Far from the City for Wal-Mart?

Mr. Brewer concedes that "location, location, location" is still the key driver in industrial firms' siting decisions, and that for most industries, this means proximity to high population centers. For that and other reasons, disappointments include Boeing (which sited its 787 program in Everett, WA) and General Dynamics (which chose Virginia after a national search.). And, according to Mr. Brewer, no amount of intermodal transportation facilities could have changed the decision of a few distribution centers, including a Walmart center, to locate elsewhere, closer to larger populations. Related to the population issue is the limited size of the workforce in Moses Lake, which also played a factor in the decision of these firms not to locate in Moses Lake. That said, however, Moses Lake is situated equally close to three population centers—Seattle, Portland and Spokane, and this gives the development community a good reason to be optimistic about the area's ability to attract intermodal freight business in the future.

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Appendix B

CRBW
Estimated Rehabilitation and Maintenance Costs

Northern Columbia Basin
Rail Project

Railroads are required to reinvest into their privately owned physical plants in order to maintain existing, and possibly growing transportation, service levels. These costs can be substantial and of course depend on the type of operations, territory, and traffic.

The Columbia Basin Railroad (CBRW) has a diverse customer base, a relatively high carloadings per track mile ratio, a relatively easy territory to maintain, and a physical plant in good condition for a short line. There is evidence that they have reinvested substantial money into their primary track segments.

For the purposes of this analysis, the project team estimated the costs for rehabilitating the three main lines of the CBRW: Grant County International Airport (GCIA) to Parker Horn (Segment 3), Parker Horn to McDonald (Segment 4c), and Wheeler to Connell. **Exhibit B.1** provides a summary of the total costs for rehabilitating the CBRW.

Exhibit B1
Cost to Rehabilitate the CBRW
(in 2005 Dollars)

Segment	Estimated Cost
GCIA to Parker Horn	$1,844,000
Parker Horn to McDonald	$4,086,000
McDonald to Wheeler	$5,957,000
Wheeler to Connell	$55,088,000
TOTAL	$66,975,000

GCIA to Parker Horn

This section of the rail line is discussed throughout this report as Segment 3. The proposed upgrade of this segment consists primarily of replacement of rail and other track materials. The line upgrade would permit use of larger 286,000 pound rail cares. These size cars are becoming standard on the main line rail system. Upgrades to the two signalized grade crossings (Stratford Road and Harris Road) are also included in the design, although they are in good to excellent condition. With these upgrades this portion could easily meet FRA Track Safety Standards for Class 2, which would allow the line to be operated at 25 miles per hour (mph). The existing alignment and general profile would not be changed. **Exhibit B.2** on the following page presents the cost estimates to rehabilitate this section of the rail line.

Exhibit B.2
Cost Estimate to Rehabilitate CBRW Line between GCIA and Parker Horn
(in 2005 Dollars)

Track Improvements					
ITEM	**UNIT**	**UNIT PRICE**	**QTY.**	**AMOUNT**	**SUBTOTAL**
Mobilization Etc.					**$ 35,000**
Mobilization	LS	$ 35,000.00	1	$ 35,000	
Real Estate Purchase	AC	$ 20,000.00		$ -	
Track-Related Earthwork					**$ -**
Clear & Grub	AC	$ 3,000.00		$ -	
Remove Structures	EA	$ 3,000.00		$ -	
Excavation to Waste (Incl. Haul)	CY	$ 8.50		$ -	
Fill from Excavation	CY	$ 5.00		$ -	
Fill from Borrow	CY	$ 15.00		$ -	
Subballast	CY	$ 28.00		$ -	
Track					**$ 1,246,000**
Install 115 LB Ballasted Track	TF	$ 85.00		$ -	
Install No. 11 T.O Hand Throw (HT)	EA	$125,000		$ -	
Install No. 9 T.O Hand Throw (HT)	EA	$34,000		$ -	
Shift Track	TF	$ 28.00		$ -	
Track Removal	TF	$ 11.00		$ -	
Track Rehab	TF	$ 50.00	20592	$ 1,029,600	
Track Relay & Shoulder Improvements	TF	$ 70.00		$ -	
Grade Crossing Signals	EA	$ 120,000.00	1	$ 120,000	
Concrete Grade Crossing	TF	$ 800.00	120	$ 96,000	
Timber Grade Crossing	TF	$ 140.00		$ -	
Structures					**$ -**
Bridge	LF	$ 5,500.00	0	$ -	
Irrigation Water Box Siphons	EA	$ 50,000.00	0	$ -	
Drainage					**$ -**
24" RCP Class V	LF	$ 40.00		$ -	
36" RCP Class V	LF	$ 60.00		$ -	
54" RCP Class V	LF	$ 280.00		$ -	
64" RCP Class V	LF	$ 350.00		$ -	
Utilities					**$ -**
Phone Accom	EA	$ 5,000.00		$ -	
Water Accom	EA	$ 25,000.00		$ -	
Gas Accom	EA	$ 10,000.00		$ -	
Sewer Accom	EA	$ 25,000.00		$ -	
UG Power Accom	EA	$ 12,000.00		$ -	
OH Power Accom	EA	$ 8,000.00		$ -	
Contingencies (20%)			20%		**$ 256,000**
Environmental Mitigation			5%		**$ 62,000**
Construction Subtotal					**$ 1,599,000**
Engineering Design (3.5%)			3.5%		**$ 56,000**
Construction Management (3%)			3.0%		**$ 48,000**
Sales Tax			8.8%		**$ 141,000**
TOTAL					**$ 1,844,000**

Parker Horn to McDonald

Rehabilitation of this line includes reconstruction and rehabilitation of the rail line, as well as new grade crossing signals. **Exhibit B.3** presents the cost estimate for this rehabilitation.

Exhibit B.3
Cost Estimate to Rehabilitate CBRW Line between Parker Horn to McDonald
(in 2005 Dollars)

Track Improvements					
ITEM	**UNIT**	**UNIT PRICE**	**QTY.**	**AMOUNT**	**SUBTOTAL**
Mobilization Etc.					**$ 35,000**
Mobilization	LS	$ 35,000.00	1	$ 35,000	
Real Estate Purchase	AC	$ 20,000.00		$ -	
Track-Related Earthwork					**$ -**
Clear & Grub	AC	$ 3,000.00		$ -	
Remove Structures	EA	$ 3,000.00		$ -	
Excavation to Waste (Incl. Haul)	CY	$ 8.50		$ -	
Fill from Excavation	CY	$ 5.00		$ -	
Fill from Borrow	CY	$ 15.00		$ -	
Subballast	CY	$ 28.00		$ -	
Track					**$ 2,530,000**
Demo Crossing	TF	$ 85.00		$ -	
Demo Track	TF	$3		$ -	
Demo Turnout	EA	$1,400		$ -	
Shift Track	TF	$ 28.00		$ -	
Track Reconstruction	TF	$ 50.00	5280	$ 264,000	
Track Rehab	TF	$ 37.00	22733	$ 841,121	
Track Rehab Including Rail	TF	$ 65.00	10163	$ 660,595	
Grade Crossing Signals	EA	$ 120,000.00	4	$ 420,000	
Concrete Grade Crossing	TF	$ 800.00	410	$ 328,000	
Timber Grade Crossing	TF	$ 200.00	80	$ 16,000	
Structures					**$ 272,000**
Bridge	LF	$ 2,000.00	136	$ 272,000	
Irrigation Water Box Siphons	EA	$ 50,000.00	0	$ -	
Drainage					**$ -**
24" RCP Class V	LF	$ 40.00		$ -	
36" RCP Class V	LF	$ 60.00		$ -	
54" RCP Class V	LF	$ 280.00		$ -	
64" RCP Class V	LF	$ 350.00		$ -	
Utilities					**$ -**
Phone Accom	EA	$ 5,000.00		$ -	
Water Accom	EA	$ 25,000.00		$ -	
Gas Accom	EA	$ 10,000.00		$ -	
Sewer Accom	EA	$ 25,000.00		$ -	
UG Power Accom	EA	$ 12,000.00		$ -	
OH Power Accom	EA	$ 8,000.00		$ -	
Contingencies (20%)			20%		**$ 567,000**
Environmental Mitigation			5%		**$ 140,000**
Construction Subtotal					**$ 3,544,000**
Engineering Design (3.5%)			3.5%		**$ 124,000**
Construction Management (3%)			3.0%		**$ 106,000**
Sales Tax			8.8%		**$ 312,000**
TOTAL					**$ 4,086,000**

McDonald to Wheeler

Rehabilitation of this line includes reconstruction and rehabilitation of the rail line, as well as new grade crossing signals. **Exhibit B.4** presents the cost estimate for this rehabilitation.

Exhibit B.4
Cost Estimate to Rehabilitate CBRW Line between Parker Horn to McDonald
(in 2005 Dollars)

Track Improvements					
ITEM	**UNIT**	**UNIT PRICE**	**QTY.**	**AMOUNT**	**SUBTOTAL**
Mobilization Etc.					**$ 35,000**
Mobilization	LS	$ 35,000.00	1	$ 35,000	
Real Estate Purchase	AC	$ 20,000.00		$ -	
Track-Related Earthwork					**$ -**
Clear & Grub	AC	$ 3,000.00		$ -	
Remove Structures	EA	$ 3,000.00		$ -	
Excavation to Waste (Incl. Haul)	CY	$ 8.50		$ -	
Fill from Excavation	CY	$ 5.00		$ -	
Fill from Borrow	CY	$ 15.00		$ -	
Subballast	CY	$ 28.00		$ -	
Track					**$ 3,979,000**
Demo Crossing	TF	$ 85.00		$ -	
Demo Track	TF	$3		$ -	
Demo Turnout	EA	$1,400		$ -	
Shift Track	TF	$ 28.00		$ -	
Track Reconstruction	TF	$ 50.00	4224	$ 211,200	
Track Rehab	TF	$ 37.00		$ -	
Track Rehab Including Rail	TF	$ 65.00	46200	$ 3,003,000	
Grade Crossing Signals	EA	$ 120,000.00	5	$ 600,000	
Concrete Grade Crossing	TF	$ 800.00	190	$ 152,000	
Timber Grade Crossing	TF	$ 200.00	64	$ 12,800	
Structures					**$ 120,000**
Bridge	LF	$ 2,000.00	60	$ 120,000	
Irrigation Water Box Siphons	EA	$ 50,000.00	0	$ -	
Drainage					**$ -**
24" RCP Class V	LF	$ 40.00		$ -	
36" RCP Class V	LF	$ 60.00		$ -	
54" RCP Class V	LF	$ 280.00		$ -	
64" RCP Class V	LF	$ 350.00		$ -	
Utilities					**$ -**
Phone Accom	EA	$ 5,000.00		$ -	
Water Accom	EA	$ 25,000.00		$ -	
Gas Accom	EA	$ 10,000.00		$ -	
Sewer Accom	EA	$ 25,000.00		$ -	
UG Power Accom	EA	$ 12,000.00		$ -	
OH Power Accom	EA	$ 8,000.00		$ -	
Contingencies (20%)			20%		**$ 827,000**
Environmental Mitigation			5%		**$ 205,000**
Construction Subtotal					**$ 5,166,000**
Engineering Design (3.5%)			3.5%		**$ 181,000**
Construction Management (3%)			3.0%		**$ 155,000**
Sales Tax			8.8%		**$ 455,000**
TOTAL					**$ 5,957,000**

Wheeler to Connell

The Wheeler to Connell portion of the CBRW is the most important segment of the line because of the amount of traffic originating or terminating in Wheeler. The Warden to Connell portion is, of course, critical because it is the route to CBRW's single interchange point (with the BNSF). Almost every car interchanged to CBRW makes a round trip between Connell and Warden.

While the railroad is well maintained, the CBRW will be faced with substantial ongoing reinvestment requirements in the future. Rail and bridges are some of the most costly items that a railroad is required to replace. Fortunately these are investments that do not "wear out" quickly, particularly bridges. Interestingly, on a shortline and specifically the CBRW, the cost for rail and bridges appear to be lower than the cost to replace other track items – particularly crossties - if you look at these costs over time.

Our analysis attempted to address every capital cost, specific to the CBRW's Wheeler to Connell segment. The total distance is roughly 40 miles. The Warden to Connell portion of the line sees almost 1.5 million gross tons (MGT) a year. The Wheeler to Warden portion sees between 1.0 and 1.1 MGT a year. The line has seen as much as 2.4 MGT per year in the recent past (early to mid-1990's - primarily seasonal sugar beets). The vast majority of the CBRW line infrastructure is pre "286K" design but 286K traffic is currently allowed on the Wheeler to Connell segment. Arguably, this means that the railroad should be updated in an aggressive manner to keep this type of traffic, which will be come predominate in the near future, from rapidly degrading the once adequate, but now underrated facilities.

Exhibit B.5 on the following page summarizes these findings.

In the rail analysis, we have included replacing all rail (once) that is currently one hundred pound or smaller, and replacing sections in high curvature areas as well (once). The rail would be 112 pound minimum which would require all steel other track material (OTM) to be replaced. This is approximately 31 track miles.

In the bridge analysis we have included replacing all of the timber bridges (once). Many of these bridges are in good to fair shape today but will require replacement or substantial reconstruction, at a minimum, in the 75 year window. The CBRW has fourteen structures that will need to be addressed including four that are over two hundred feet in length. The existing steel structures were presumed to be "good" with minor maintenance in the foreseeable future.

In the tie replacement etc. analysis we have included replacing every tie twice, installing 0.25 tons of ballast per track foot and surfacing the entire segment every five years, and ditching twenty miles of the railroad twice.

In the "other" category we have included an allowance for replacing and / or updating grade crossing signal systems, replacing culverts, replacing main track turnouts components (twice) and grade crossings (premium – average twice on all crossings).

The costs appear to be reasonable as they are in line with industry accepted generalizations. If the CBRW currently spends between $9,000 and $12,000 per mile on capital and expense maintenance of way on this segment (and this is only an educated guess), then this brief analysis would indicate the railroad will generally degrade unless other funds are made available. It is interesting to note; if the tie etc. portion of the analysis is looked at alone – or say adjusted up to $30 million, the cost per mile /year (75 years, forty miles) is $10,000.00.

Exhibit B.5
Wheeler to Connell Capital Requirements over 75 Years

Railroad Infrastructure Investments	
Rail	**$ 9,585,000**
Bridges	**$ 11,495,000**
Ties, Ballast, Surface, Ditching	**$ 28,865,000**
Other	**$ 5,143,000**
TOTAL Investment	**$ 55,088,000**
TOTAL per year / per track mile	**$ 18,363**

Notes:
1) Sales Tax is included.
2) Subtotals rounded to nearest 1,000s.
3) Estimate in 2005 dollars.
4) No contingency multiplier or percentage included above.
5) Does not include inspection, and routine maintenance, including vegetation control.
6) Presumes only modest overall growth in traffic.
7) Based on existing operation and speeds.
8) Based on current standard rolling stock (equipment).
9) Locomotive, Administrative, Etc. Facilities Have Not Been Considered.

Appendix C

Environmental Fatal Flaw Analysis

Evaluation Matrix

Northern Columbia Basin
Rail Project

Exhibit C-1
Environmental Resource Categories and Evaluation Questions
Segment 1

Environmental Resource	Evaluation Question	Segment 1 Alternatives			
		1	2	3	Preferred
Human Environment					
Land Use and Growth	Is the facility incompatible with existing community plans and zoning?	No			
	Would it result in the displacement of homes, farm facilities, or businesses?	No			
	Would farmland be impacted?	Yes			
Social and Economic	Would the facility divide the community?	No			
	Would it adversely impact low-income or minority populations?				
	Would the facility take or disrupt park or recreation areas?				
	Will the new facility deter or slow down emergency vehicles?	Maybe, new roadway crossings will be added to the transportation network.			
	Would the facility decrease pedestrian and bicycle safety?	Maybe, new roadway crossings will be added to the transportation network.			
Transportation/Traffic	Would the facility impact vehicular circulation?	Maybe, new roadway crossings will be added to the transportation network.			
Visual Quality	Would the facility be a visual distraction to nearby residents?	No			
Cultural Resources	Would the facility take or disrupt historic or archeological resources?	Unable to determine at this time. An historical and archeological review will be necessary.			

Exhibit C-1 (Continued)
Environmental Resource Categories and Evaluation Questions

Environmental Resource	Evaluation Question	Segment 1 Alternatives			
		1	2	3	Preferred
Physical Environment					
Hydrology and Floodplains	Is the project located in a mapped floodplain or would it disrupt river flow?	No			
Water Quality and Storm Water Run-Off	Would the facility increase the impervious surface? Would the facility, or operation of the trains, contribute to decreased water quality?	No			
Hazardous Materials	Would construction of the route require the removal of extensive hazardous materials?	Unsure. A hazardous materials assessment will be required.			
Air Quality	Would air quality deteriorate as result of the route?	It is not anticipated that idling vehicles at roadway crossings will impact air quality. A hot spot analysis may be required to confirm.			
Noise and Vibration	Would construction vibration permanently damage any historic properties within the area?	Unable to determine at this time. An historical and archeological review will be necessary.			
	Would rail operations create noise impacts to homes or other sensitive facilities?	No			
	Would construction noise and vibration encourage wildlife and/or threatened and endangered species to permanently vacate their nests or habitat?	Unsure, a review of wildlife habitat in the general area needs to be performed.			

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Exhibit C-1 (Continued)
Environmental Resource Categories and Evaluation Questions

Environmental Resource	Evaluation Question	Segment 1 Alternatives			
		1	2	3	Preferred
Biological Environment					
Vegetation	Would valuable vegetation be removed? Would land identified by the WDNR as unique or high quality native plant communities be affected?	No			
Wildlife	Would construction noise and vibration encourage wildlife and/or threatened and endangered species to permanently vacate their nests or habitat?	Unsure, a review of wildlife habitat in the general area needs to be performed.			
	Would the facility create a barrier for wildlife movement?	No			
Fish	Would construction noise and vibration encourage fish species to permanently vacate their nests or habitat? Would the project impact fish habitat?	No			
Wetlands	Would valuable wetlands be removed, thus destroying habitat?	No	Yes	No	No
Threatened and Endangered Species	Would construction noise and vibration encourage threatened and endangered species to permanently vacate their nests or habitat?	Unsure, a review of wildlife habitat in the general area needs to be performed.			

Exhibit C-2
Environmental Resource Categories and Evaluation Questions
Segments 3 and 4

Environmental Resource	Evaluation Question	Segment			
		3	4 Aban	4 Partial Aban/Rehab	4 Rehab
Human Environment					
Land Use and Growth	Is the facility incompatible with existing community plans and zoning?	No			
	Would it result in the displacement of homes, farm facilities, or businesses?	No	Yes	No	No
	Would farmland be impacted?	No			
Social and Economic	Would the facility divide the community?	No			
	Would it adversely impact low-income or minority populations?				
	Would the facility take or disrupt park or recreation areas?				
	Will the new facility deter or slow down emergency vehicles?	No			
	Would the facility decrease pedestrian and bicycle safety?	No			
Transportation/Traffic	Would the facility impact vehicular circulation?	No			
Visual Quality	Would the facility be a visual distraction to nearby residents?	No			
Cultural Resources	Would the facility take or disrupt historic or archeological resources?	No			

Exhibit C-2 (Continued)
Environmental Resource Categories and Evaluation Questions

Environmental Resource	Evaluation Question	Segment			
		3	4 Aban	4 Partial Aban/Rehab	4 Rehab
Physical Environment					
Hydrology and Floodplains	Is the project located in a mapped floodplain or would it disrupt river flow?	No			
Water Quality and Storm Water Run-Off	Would the facility increase the impervious surface? Would the facility, or operation of the trains, contribute to decreased water quality?	No			
Hazardous Materials	Would construction of the route require the removal of extensive hazardous materials?	Unsure. A hazardous materials assessment will be required.			
Air Quality	Would air quality deteriorate as result of the route?	No			
Noise and Vibration	Would construction vibration permanently damage any historic properties within the area?	No			
	Would rail operations create noise impacts to homes or other sensitive facilities?	No			
	Would construction noise and vibration encourage wildlife and/or threatened and endangered species to permanently vacate their nests or habitat?	Unsure, a review of wildlife habitat in the general area needs to be performed.			

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Exhibit C-2 (Continued)
Environmental Resource Categories and Evaluation Questions

Environmental Resource	Evaluation Question	Segment			
		3	4 Aban	4 Partial Aban/Rehab	4 Rehab
Biological Environment					
Vegetation	Would valuable vegetation be removed? Would land identified by the WDNR as unique or high quality native plant communities be affected?	No			
Wildlife	Would construction noise and vibration encourage wildlife and/or threatened and endangered species to permanently vacate their nests or habitat?	Unsure, a review of wildlife habitat in the general area needs to be performed.			
	Would the facility create a barrier for wildlife movement?	No			
Fish	Would construction noise and vibration encourage fish species to permanently vacate their nests or habitat? Would the project impact fish habitat?	No			
Wetlands	Would valuable wetlands be removed, thus destroying habitat?	No			
Threatened and Endangered Species	Would construction noise and vibration encourage threatened and endangered species to permanently vacate their nests or habitat?	Unsure, a review of wildlife habitat in the general area needs to be performed.			

Exhibit C-3
Environmental Resource Categories and Evaluation Questions
Segments 2 and 5

Environmental Resource	Evaluation Question	Segment 5 Alternatives			
		2	5	5b	
Human Environment					
Land Use and Growth	Is the facility incompatible with existing community plans and zoning?	No			
	Would it result in the displacement of homes, farm facilities, or businesses?	Yes			
	Would farmland be impacted?	Yes			
Social and Economic	Would the facility divide the community?	No			
	Would it adversely impact low-income or minority populations?				
	Would the facility take or disrupt park or recreation areas?				
	Will the new facility deter or slow down emergency vehicles?	Maybe, new roadway crossings will be added to the transportation network.			
	Would the facility decrease pedestrian and bicycle safety?	Maybe, new roadway crossings will be added to the transportation network.			
Transportation/Traffic	Would the facility impact vehicular circulation?	Maybe, new roadway crossings will be added to the transportation network.			
Visual Quality	Would the facility be a visual distraction to nearby residents?	No			
Cultural Resources	Would the facility take or disrupt historic or archeological resources?	Unable to determine at this time. An historical and archeological review will be necessary.			

Exhibit C-3 (Continued)
Environmental Resource Categories and Evaluation Questions

Environmental Resource	Evaluation Question	Segment 5 Alternatives			
		2	5	5b	
Physical Environment					
Hydrology and Floodplains	Is the project located in a mapped floodplain or would it disrupt river flow?	No			
Water Quality and Storm Water Run-Off	Would the facility increase the impervious surface? Would the facility, or operation of the trains, contribute to decreased water quality?	No			
Hazardous Materials	Would construction of the route require the removal of extensive hazardous materials?	Unsure. A hazardous materials assessment will be required.			
Air Quality	Would air quality deteriorate as result of the route?	It is not anticipated that idling vehicles at roadway crossings will impact air quality. A hot spot analysis may be required to confirm.			
Noise and Vibration	Would construction vibration permanently damage any historic properties within the area?	Unable to determine at this time. An historical and archeological review will be necessary.			
	Would rail operations create noise impacts to homes or other sensitive facilities?	No			
	Would construction noise and vibration encourage wildlife and/or threatened and endangered species to permanently vacate their nests or habitat?	Unsure, a review of wildlife habitat in the general area needs to be performed.			

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Exhibit C-3 (Continued)
Environmental Resource Categories and Evaluation Questions

Environmental Resource	Evaluation Question	Segment 5 Alternatives			
		2	5	5b	
Biological Environment					
Vegetation	Would valuable vegetation be removed? Would land identified by the WDNR as unique or high quality native plant communities be affected?	Unsure, further engineering will be required to ensure that native sage fields are not disrupted.			
Wildlife	Would construction noise and vibration encourage wildlife and/or threatened and endangered species to permanently vacate their nests or habitat?	Unsure, a review of wildlife habitat in the general area needs to be performed.			
	Would the facility create a barrier for wildlife movement?	No			
Fish	Would construction noise and vibration encourage fish species to permanently vacate their nests or habitat? Would the project impact fish habitat?	No			
Wetlands	Would valuable wetlands be removed, thus destroying habitat?	No	Unsure, wetland review and classifications will be required.		
Threatened and Endangered Species	Would construction noise and vibration encourage threatened and endangered species to permanently vacate their nests or habitat?	Unsure, a review of wildlife habitat in the general area needs to be performed.			

Appendix D

Railroad Design Standards and Criteria

Northern Columbia Basin Rail Project

Appendix D
Railroad Design Standards and Criteria

The alignment parameters for the *Northern Columbia Basin Railroad Project Feasibility Study* were developed with consideration for light traffic main line freight operations, safety, and accepted railroad engineering practices.

Right of Way

A one hundred foot wide right of way was assumed for all new rail lines.

Design Speed

The proposed design speeds for this project are 25 miles per hour. The actual design speeds will be limited by curvature and grade considerations.

Clearances

The desirable minimum track spacing for new freight mainline tracks shall be 25 feet. For new freight mainlines, sidings or extensions, the desirable minimum track spacing shall be fifteen feet. For freight yard tracks, the desirable minimum track spacing shall be fifteen feet. For existing mainline and siding tracks, the current track spacing will be maintained.

The desirable horizontal distance from the centerline of new tangent track to a fixed object shall not be less than 25 feet (or twelve feet minimum off mainline, including distance to crash walls). Minimum distance from the centerline of new non-mainline track to crash wall shall not be less than ten feet.

The minimum vertical distance from the top of rail to the nearest point of obstruction shall be 23.5 feet. The minimum construction vertical clearance shall be 21.5 feet above top of rail.

For the purposes of the study, a plan and profile will be developed that will not include specific information relating vertical and horizontal clearances.

Track Superelevation

Superelevation shall be consistent through circular curves. It shall be achieved by maintaining the top of the inside rail at the top-of-rail profile and raising the outside rail by an amount equal to the track superelevation.

Track superelevation is based on the following formula:

$E = E_a + E_u = 0.0007*D*V^2$

where:

E = total superelevation in inches
E_a = actual superelevation in inches
E_u = unbalance superelevation in inches
D = degree of curve
V = speed in mph

The desirable maximum unbalanced superelevation (E_u) shall be 2.0 inches for freight equipment.

The allowable maximum actual superelevation (E_a) shall be based on 25 mph freight speed. In no case shall the actual superelevation exceed five inches.

Superelevation should be applied in 1/4-inch increments. An actual superelevation of ¾-inch shall be used when the calculated superelevation is less than ¾-inch. See tables for allowable superelevation per BNSF included at the end of this Appendix.

Development of specific superelevation is outside the scope of the study.

Circular Curves

Circular curves shall be defined by the one hundred foot chord definition of curvature and specified by the degree of curvature.

The maximum allowable degree of curvature shall be 7.5 degrees consistent with *BNSF Design Guidelines for the Construction of Industrial Tracks*. As much as possible, curves should be three degrees or less.

The desirable minimum degree of curve for any design speed shall be determined by the formula:

$D = (E_a + E_u) / (0.0007*V^2)$

where:

E = total superelevation in inches
E_a = actual superelevation in inches
E_u = unbalance superelevation in inches
D = degree of curve

V = speed in mph

using maximums of Ea = 5.0 inches and E_u = 2.0 inches for freight equipment

For the purposes of the study, design of circular curves will be based on vertical and horizontal constraints alone.

Minimum Tangent Length

The desired minimum tangent length in feet shall be three times the design speed in miles per hour. The minimum tangent length for mainline track shall be one hundred feet. The minimum tangent length for passing siding track shall be one hundred feet. The minimum tangent length for yard track shall be fifty feet.

Reverse Curves

The minimum tangent length between reverse curves is two hundred feet.

Transition Spirals

A transition spiral is defined as a curve that provides a gradual rate of change in curvature from a tangent path to a curve path. Spirals are used to gradually bring about the full amount of actual superelevation of the outer rail on curves and to improve overall rideability. All horizontal circular curves in the mainline tracks require transition spirals. Actual superelevation shall be attained linearly through the length of the transition spiral.

BNSF has recommended the following formula for the minimum spiral length:

$L_s = 1.2*V*E_u$

where:

L_s = length of spirals in feet
E_u = unbalanced superelevation in inches
V = speed in mph

The ratio of elevation to length of spiral shall not exceed 0.24 inches per foot.

The BNSF minimum spiral length conforms to the following:

- All spiral lengths round to the nearest ten feet.

- Where calculated minimum length is less than forty feet, set minimum length at forty feet.

See tables for Spiral Lengths per BNSF included in this Appendix.

For the purpose of the study, spirals will not be shown in proposed preliminary alignments. The curves presented will be suitable for further developed using spirals.

Vertical Grades

The desirable maximum profile gradient on mainline track shall be 0.5 percent. The absolute maximum profile gradient for mainline track shall be two percent, except where existing rail gradients are greater than two percent. In such cases, the maximum gradient shall equal the existing rail gradient.

Vertical Curves

The desirable length of vertical curves should hold the rate of change of grade to a minimum. For mainline tracks the rate of change for crest vertical curves should not exceed one foot per station of one hundred feet, and the rate of change for sag vertical curves shall not exceed 0.5 foot per station of one hundred feet.

The following criteria shall govern the use of vertical curves:

- The minimum length of vertical curve shall be at least one hundred feet.
- Back to back reverse vertical curves may not be used. The minimum tangent length between vertical curves shall be one hundred feet.
- Vertical curves will not be required for grade intersections where the algebraic difference in grade is less than or equal to 0.1 percent.

In the study, vertical curves will not be developed but instead only vertical intersections will be indicated. Vertical intersections will be such that further development will be possible.

Combined Horizontal and Vertical Curves

Combined vertical and horizontal curves should be avoided. Where the combination of horizontal and vertical curves cannot be avoided the minimum distance between vertical control points (PVC and PVT) and horizontal control points (PC and PT) shall be 100 feet.

Turnouts

Turnouts (T.O.) for track work shall comply with BNSF / Union Pacific Common Standard Plans. The following is based on the Common Standard:

Turnout Data	PS1 to PITO2	Turnout Length	Turnout Angle
#9	30.17’	107.38’	6°21’35”
#11	31.25’	124.58’	5°12’18”
1 PS = Point of Switch 2 PITO = Point of Intersection of Turnout			

Approved Track for Turnouts

Use the following table to determine the approved track where the turnout can be installed and the required approval.

Turnout No.	Approved Track
No. 9	Yard
No. 11*	Main Line / Yard Industry

** Note: Turnout No. 11 is the minimum size turnout for all new construction in a main track.*

Turnouts and switches shall not be placed on horizontal or vertical curves. Super-elevation shall not be employed through a switch or turnout.

Weight of Rail

Use the following table to determine the preferred weight of rail for turnouts.

Preferred Weight of Rail	Tracks
New or Second Hand (Relay) AREMA #1 - 112 or greater – lb jointed or CWR rail	Light tonnage and secondary main lines

Specific track elements such as size of turnouts and weight of rail will not be specified in the study, but alignments and profiles will be prepared to allow for further development in accordance with these standards.

Speeds through Turnouts

The following listing depicts the allowable speeds through turnouts:

Turnout Number	Speed
No. 9 and below	10 mph
No. 10 and 11	15 mph

Turnouts and switches shall not be placed on horizontal or vertical curves. Super-elevation shall not be employed through a switch or turnout.

Yard leads shall be "straight" with no curves immediately off the switch ties. Distance between turnout points of switches shall be a minimum of 110 feet for No. 9 turnouts.

Typical Roadbed Section

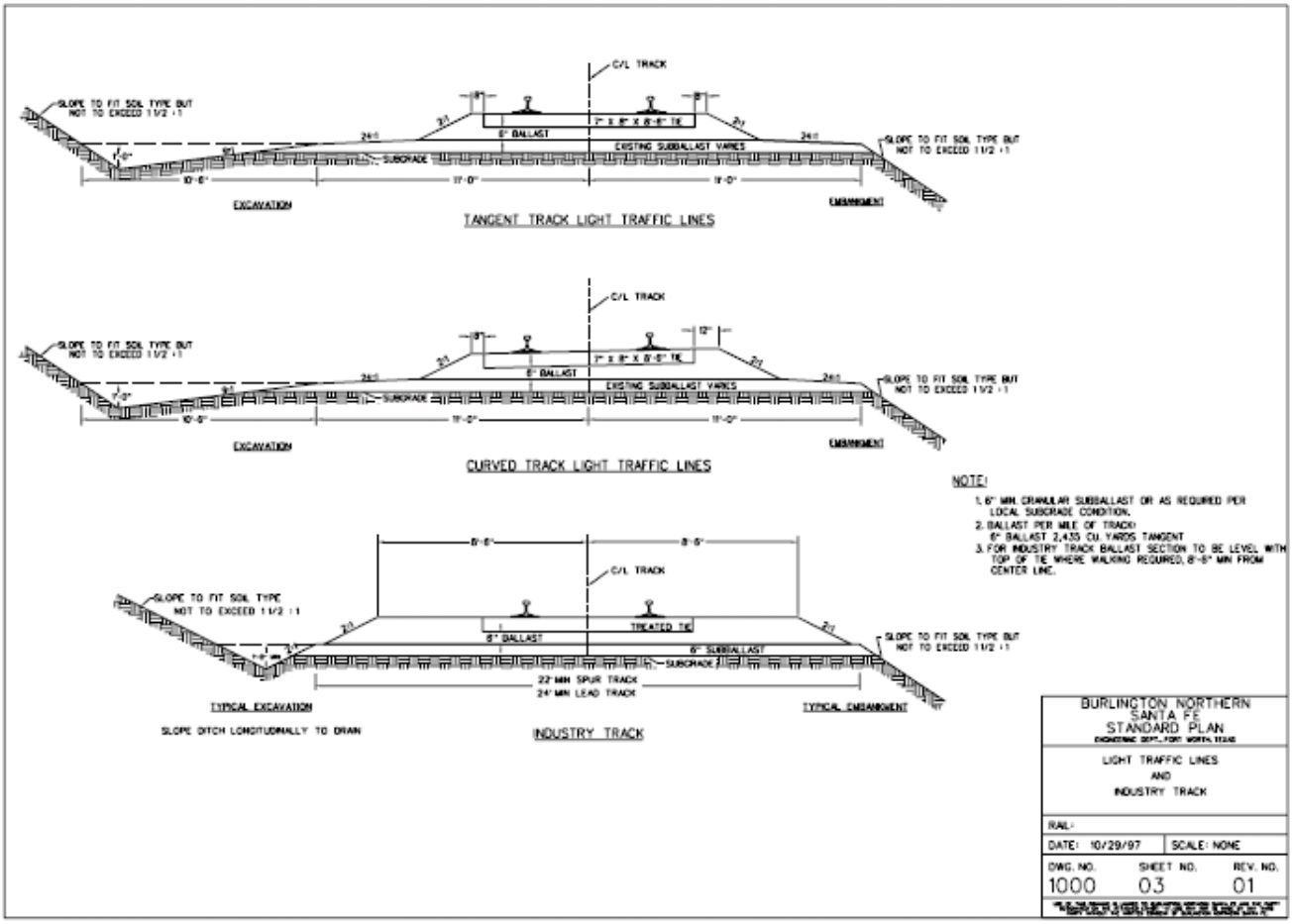
The typical roadbed section for new construction will comply with BNSF Design Guidelines for the Construction of Industrial Tracks - Standards Plan Drawing No. 1000 Sheet No. 3 Rev. No. 01 (see Figure 1 in this Appendix). This section includes timber crossties on 6" of ballast, or concrete crossties on eight inch of ballast, which is on six inch subballast, on a compacted subgrade.

Railroad Construction

Track materials and special track work shall conform to recommendations set forth in the *BNSF Design Guidelines for the Construction of Industrial Track* (June 2005).

Grade Crossing Signal Construction

Highway/railroad at-grade crossings will be protected with typical industry standard signal installations for a light traffic mainline at all grade crossings of primary county and city roads and at all State Highways.


C/L TRACK
SLOPE TO FIT SOIL TYPE BUT NOT TO EXCEED 1 1/2 : 1
6" BALLAST
7" x 8" X 8'-6" TIE
EXISTING SUBBALLAST VARIES
SUBGRADE
EXCAVATION
EMBANKMENT
TANGENT TRACK LIGHT TRAFFIC LINES
12"
CURVED TRACK LIGHT TRAFFIC LINES
NOTE:
1. 6" MIN. GRANULAR SUBBALLAST OR AS REQUIRED PER LOCAL SUBGRADE CONDITION.
2. BALLAST PER MILE OF TRACK:
6" BALLAST 2,435 CU. YARDS TANGENT
3. FOR INDUSTRY TRACK BALLAST SECTION TO BE LEVEL WITH TOP OF TIE WHERE WALKING REQUIRED, 8'-6" MIN FROM CENTER LINE.
8'-6"
TREATED TIE
8" BALLAST
6" SUBBALLAST
22' MIN SPUR TRACK
24' MIN LEAD TRACK
TYPICAL EXCAVATION
TYPICAL EMBANKMENT
SLOPE DITCH LONGITUDINALLY TO DRAIN
INDUSTRY TRACK
BURLINGTON NORTHERN SANTA FE
STANDARD PLAN
LIGHT TRAFFIC LINES AND INDUSTRY TRACK
RAIL:
DATE: 10/29/97
SCALE: NONE
DWG. NO. 1000
SHEET NO. 03
REV. NO. 01

Appendix A

Two-Inch Unbalanced Design Superelevation for Freight Trains

Curvature		Speed																
		20 mph	25 mph	30 mph	35 mph	40 mph	45 Mph	50 mph	55 mph	60 mph	65 mph	70 mph	75 mph	80 mph	85 mph	90 mph
degrees	Minutes	Elevation in Inches														
0	30	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 7/8
0	40	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	1 0	1 3/8	1 7/8
0	50	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 7/8	1 3/8	1 3/4	2 1/4	2 3/4
1	0	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	1 0	1 1/2	2 0	2 1/2	3 1/8	3 3/4
1	10	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	1 0	1 1/2	2 1/8	2 5/8	3 1/4	4 0	4 5/8
1	20	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 7/8	1 3/8	2 0	2 5/8	3 1/4	4 0	4 3/4	
1	30	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	1 1/4	1 7/8	2 1/2	3 1/4	4 0	4 3/4		
1	40	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	1 0	1 5/8	2 1/4	3 0	3 3/4	4 5/8			
1	50	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	1 1/4	2 0	2 5/8	3 1/2	4 3/8				
2	0	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 7/8	1 1/2	2 1/4	3 1/8	4 0	4 7/8				
2	10	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	1 1/8	1 7/8	2 5/8	3 1/2	4 1/2					
2	20	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	1 3/8	2 1/8	3 0	4 0	5 0					
2	30	0 3/4	0 3/4	0 3/4	0 3/4	0 7/8	1 5/8	2 3/8	3 3/8	4 3/8						
2	40	0 3/4	0 3/4	0 3/4	0 3/4	1 0	1 7/8	2 3/4	3 3/4	4 3/4						
2	50	0 3/4	0 3/4	0 3/4	0 3/4	1 1/4	2 1/8	3 0	4 0							
3	0	0 3/4	0 3/4	0 3/4	0 3/4	1 3/8	2 3/8	3 1/4	4 3/8							
3	10	0 3/4	0 3/4	0 3/4	0 3/4	1 5/8	2 1/2	3 5/8	4 3/4							
3	20	0 3/4	0 3/4	0 3/4	0 7/8	1 3/4	2 3/4	3 7/8								
3	30	0 3/4	0 3/4	0 3/4	1 1/8	2 0	3 0	4 1/8								
3	40	0 3/4	0 3/4	0 3/4	1 1/4	2 1/8	3 1/4	4 1/2								
3	50	0 3/4	0 3/4	0 3/4	1 3/8	2 3/8	3 1/2	4 3/4								
4	0	0 3/4	0 3/4	0 3/4	1 1/2	2 1/2	3 3/4	5 0								
4	10	0 3/4	0 3/4	0 3/4	1 5/8	2 3/4	4 0									
4	20	0 3/4	0 3/4	0 3/4	1 3/4	2 7/8	4 1/4									
4	30	0 3/4	0 3/4	0 7/8	1 7/8	3 1/8	4 1/2									
4	40	0 3/4	0 3/4	1 0	2 1/8	3 1/4	4 5/8									
4	50	0 3/4	0 3/4	1 1/8	2 1/4	3 1/2	4 7/8									
5	0	0 3/4	0 3/4	1 1/4	2 3/8	3 5/8										
5	10	0 3/4	0 3/4	1 3/8	2 1/2	3 7/8										
5	20	0 3/4	0 3/4	1 3/8	2 5/8	4 0										
5	30	0 3/4	0 3/4	1 1/2	2 3/4	4 1/4										
5	40	0 3/4	0 3/4	1 5/8	2 7/8	4 3/8										
5	50	0 3/4	0 3/4	1 3/4	3 1/8	4 5/8										
6	0	0 3/4	0 3/4	1 7/8	3 1/4	4 3/4										
6	10	0 3/4	0 3/4	2 0	3 3/8	5 0										
6	20	0 3/4	0 7/8	2 0	3 1/2											
6	30	0 3/4	0 7/8	2 1/8	3 5/8											
6	40	0 3/4	1 0	2 1/4	3 3/4											
6	50	0 3/4	1 0	2 3/8	3 7/8											
7	0	0 3/4	1 1/8	2 1/2	4 1/8											
7	10	0 3/4	1 1/4	2 5/8	4 1/4											
7	20	0 3/4	1 1/4	2 5/8	4 3/8											
7	30	0 3/4	1 3/8	2 3/4	4 1/2											
7	40	0 3/4	1 3/8	2 7/8	4 5/8											
7	50	0 3/4	1 1/2	3 0	4 3/4											
8	0	0 3/4	1 1/2	3 1/8	4 7/8											
8	10	0 3/4	1 5/8	3 1/4												
8	20	0 3/4	1 3/4	3 1/4												
8	30	0 3/4	1 3/4	3 3/8												
8	40	0 3/4	1 7/8	3 1/2												
8	50	0 3/4	1 7/8	3 5/8												
9	0	0 3/4	2 0	3 3/4												
9	10	0 3/4	2 1/8	3 7/8												
9	20	0 3/4	2 1/8	4 0												
9	30	0 3/4	2 1/4	4 0												
9	40	0 3/4	2 1/4	4 1/8												
9	50	0 7/8	2 3/8	4 1/4												
10	0	0 7/8	2 3/8	4 3/8												
10	10	0 7/8	2 1/2	4 1/2												
10	20	1 0	2 5/8	4 5/8												
10	30	1 0	2 5/8	4 5/8												
10	40	1 0	2 3/4	4 3/4												
10	50	1 1/8	2 3/4	4 7/8												
11	0	1 1/8	2 7/8	5 0												
11	10	1 1/4	3 0													
11	20	1 1/4	3 0													
11	30	1 1/4	3 1/8													
11	40	1 3/8	3 1/8													
11	50	1 3/8	3 1/4													
12	0	1 3/8	3 1/4													

v=square root of ((e+u)/.0007*d)

e=.0007*d*v^2-u

where:

v=velocity in mph

d=degree of curve in decimals

u=unbalanced elevation in inches

Four-Inch Unbalanced Superelevation*

Curvature		Speed																			
		20 mph	25 mph	30 mph	35 mph	40 mph	45 mph	50 mph	55 mph	60 mph	65 mph	70 mph	75 mph	80 mph	85 mph	90 mph
degrees	minutes															
0	30	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4
0	40	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4
0	50	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4
1	0	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	1 1/8	1 3/4
1	10	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	1 1/4	2 0	2 5/8
1	20	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	1 1/4	2 0	2 3/4	3 5/8
1	30	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	1 3/4	2 0	2 3/4	3 5/8	4 5/8
1	40	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	1 0	1 3/4	2 5/8	3 1/2	4 1/2	
1	50	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	1 1/2	2 3/8	3 1/4	4 1/4		
2	0	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	1 1/8	2 0	2 7/8	3 7/8	5 0		
2	10	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	1 1/2	2 1/2	3 1/2	4 5/8			
2	20	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	1 0	2 0	3 0	4 1/8				
2	30	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	1 3/8	2 3/8	3 1/2	4 5/8				
2	40	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	1 3/4	2 3/4	4 0					
2	50	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	1 0	2 0	3 1/4	4 1/2					
3	0	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	1 1/4	2 3/8	3 5/8	4 7/8					
3	10	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	1 5/8	2 3/4	4 0						
3	20	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	1 7/8	3 1/8	4 1/2						
3	30	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	1 0	2 1/8	3 1/2	4 7/8						
3	40	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	1 1/4	2 1/2	3 7/8							
3	50	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	1 1/2	2 3/4	4 1/8							
4	0	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	1 3/4	3 0	4 1/2							
4	10	0 3/4	0 3/4	0 3/4	0 3/4	0 3/4	2 0	3 3/8	4 7/8							
4	20	0 3/4	0 3/4	0 3/4	0 3/4	0 7/8	2 1/4	3 5/8								
4	30	0 3/4	0 3/4	0 3/4	0 3/4	1 1/8	2 1/2	3 7/8								
4	40	0 3/4	0 3/4	0 3/4	0 3/4	1 1/4	2 5/8	4 1/4								
4	50	0 3/4	0 3/4	0 3/4	0 3/4	1 1/2	2 7/8	4 1/2								
5	0	0 3/4	0 3/4	0 3/4	0 3/4	1 5/8	3 1/8	4 3/4								
5	10	0 3/4	0 3/4	0 3/4	0 3/4	1 7/8	3 3/8									
5	20	0 3/4	0 3/4	0 3/4	0 3/4	2 0	3 5/8									
5	30	0 3/4	0 3/4	0 3/4	0 3/4	2 1/4	3 7/8									
5	40	0 3/4	0 3/4	0 3/4	0 7/8	2 3/8	4 1/8									
5	50	0 3/4	0 3/4	0 3/4	1 1/8	2 5/8	4 3/8									
6	0	0 3/4	0 3/4	0 3/4	1 1/4	2 3/4	4 5/8									
6	10	0 3/4	0 3/4	0 3/4	1 3/8	3 0	4 3/4									
6	20	0 3/4	0 3/4	0 3/4	1 1/2	3 1/8	5 0									
6	30	0 3/4	0 3/4	0 3/4	1 5/8	3 3/8										
6	40	0 3/4	0 3/4	0 3/4	1 3/4	3 1/2										
6	50	0 3/4	0 3/4	0 3/4	1 7/8	3 3/4										
7	0	0 3/4	0 3/4	0 3/4	2 1/8	3 7/8										
7	10	0 3/4	0 3/4	0 3/4	2 1/4	4 1/8										
7	20	0 3/4	0 3/4	0 3/4	2 3/8	4 1/4										
7	30	0 3/4	0 3/4	0 3/4	2 1/2	4 1/2										
7	40	0 3/4	0 3/4	0 7/8	2 5/8	4 5/8										
7	50	0 3/4	0 3/4	1 0	2 3/4	4 7/8										
8	0	0 3/4	0 3/4	1 1/8	2 7/8	5 0										
8	10	0 3/4	0 3/4	1 1/4	3 1/8											
8	20	0 3/4	0 3/4	1 1/4	3 1/4											
8	30	0 3/4	0 3/4	1 3/8	3 3/8											
8	40	0 3/4	0 3/4	1 1/2	3 1/2											
8	50	0 3/4	0 3/4	1 5/8	3 5/8											
9	0	0 3/4	0 3/4	1 3/4	3 3/4											
9	10	0 3/4	0 3/4	1 7/8	3 7/8											
9	20	0 3/4	0 3/4	2 0	4 1/8											
9	30	0 3/4	0 3/4	2 0	4 1/4											
9	40	0 3/4	0 3/4	2 1/8	4 3/8											
9	50	0 3/4	0 3/4	2 1/4	4 1/2											
10	0	0 3/4	0 3/4	2 3/8	4 5/8											
10	10	0 3/4	0 3/4	2 1/2	4 3/4											
10	20	0 3/4	0 3/4	2 5/8	4 7/8											
10	30	0 3/4	0 3/4	2 5/8												
10	40	0 3/4	0 3/4	2 3/4												
10	50	0 3/4	0 3/4	2 7/8												
11	0	0 3/4	0 7/8	3 0												
11	10	0 3/4	1 0	3 1/8												
11	20	0 3/4	1 0	3 1/4												
11	30	0 3/4	1 1/8	3 1/4												
11	40	0 3/4	1 1/8	3 3/8												
11	50	0 3/4	1 1/4	3 1/2												
12	0	0 3/4	1 1/4	3 5/8												

Elevation in Inches

v=square root of ((e+u)/.0007*d)

e=.0007*d*v^2-u

where:

v=velocity in mph

d=degree of curve in decimals

u=unbalanced elevation in inches

*** Note: This table can be used to determine FRA exception limit for passenger train unbalanced elevation.**

Appendix B

Spiral Lengths

Curvature

degrees	0	0	1	1	1	2	2	2	3	3	3	4	4	4	5	5	5
minutes	20	40	0	20	40	0	20	40	0	20	40	0	20	40	0	20	40

Elevation inches

0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0 1/8	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0 1/4	20	10	10	10	10	10	10	0	0	0	0	0	0	0	0	0	0
0 3/8	40	30	20	20	20	10	10	10	10	10	10	10	10	10	10	10	0
0 1/2	50	40	30	30	20	20	20	20	10	10	10	10	10	10	10	10	10
0 5/8	60	50	40	30	30	30	30	20	20	20	20	20	10	10	10	10	10
0 3/4	80	60	50	40	40	40	40	40	40	40	40	40	40	40	40	40	40
0 7/8	90	70	60	50	40	40	40	40	40	40	40	40	40	40	40	40	40
1 0	100	90	70	60	60	50	50	50	50	50	50	50	50	50	50	50	50
1 1/8	120	100	80	70	60	60	50	50	50	50	50	50	50	50	50	50	50
1 1/4	130	120	90	80	70	60	60	60	60	60	60	60	60	60	60	60	60
1 3/8	140	140	100	90	80	70	70	60	60	60	60	60	60	60	60	60	60
1 1/2	160	150	120	100	90	80	80	70	70	70	70	70	70	70	70	70	70
1 5/8	170	160	130	110	100	90	80	70	70	70	70	70	70	70	70	70	70
1 3/4	180	170	140	120	110	100	90	80	80	80	80	80	80	80	80	80	80
1 7/8	200	200	150	130	120	110	100	100	90	90	80	80	80	80	80	80	80
2 0	210	210	180	150	130	120	100	100	90	90	90	90	90	90	90	90	90
2 1/8	220	220	190	160	140	120	120	110	100	100	100	90	90	90	90	90	90
2 1/4	240	240	200	170	160	140	130	120	100	100	100	100	100	100	100	100	100
2 3/8	250	250	210	180	170	150	140	120	120	110	110	100	100	100	100	100	100
2 1/2	270	270	240	190	180	160	150	130	130	120	120	120	110	110	110	110	110
2 5/8	280	280	250	220	180	170	150	140	140	120	120	120	110	110	110	110	110
2 3/4	290	290	260	230	190	180	160	160	140	140	130	130	120	120	120	120	120
2 7/8	310	310	270	240	200	180	170	170	150	150	130	130	130	120	120	120	120
3 0	320	320	280	250	230	190	190	180	160	160	140	140	140	130	130	130	130
3 1/8	330	330	310	260	240	220	200	180	160	160	150	150	150	140	140	140	140
3 1/4	350	350	330	290	250	230	210	190	190	170	170	150	150	150	140	140	140
3 3/8	360	360	340	300	260	240	220	200	200	180	180	160	160	160	150	150	150
3 1/2	370	370	350	310	270	250	230	210	210	180	180	160	160	160	150	150	150
3 5/8	390	390	360	320	280	260	230	210	210	190	190	170	170	170	170	160	160
3 3/4	400	400	400	330	310	270	240	240	220	200	200	200	180	180	180	160	160
3 7/8	410	410	410	340	320	270	250	250	230	230	200	200	180	180	180	170	170
4 0	430	430	430	380	330	310	280	260	240	240	210	210	190	190	190	190	170
4 1/8	440	440	440	390	340	320	290	270	240	240	220	220	190	190	190	190	180
4 1/4	450	450	450	400	350	330	300	280	250	250	220	220	220	200	200	200	180
4 3/8	470	470	470	420	360	340	310	280	280	260	230	230	230	210	210	210	210
4 1/2	480	480	480	430	370	350	320	290	290	270	270	240	240	210	210	210	210
4 5/8	490	490	490	440	410	360	330	300	300	270	270	240	240	240	220	220	220
4 3/4	510	510	510	480	420	370	340	340	310	280	280	250	250	250	220	220	220
4 7/8	520	520	520	490	430	400	350	350	320	290	290	260	260	260	230	230	230
5 0	540	540	540	510	450	420	390	360	330	300	300	300	270	270	240	240	240

Curvature

degrees	6	6	6	7	7	7	8	8	8	9	9	9	10	10	10	11	11	11
minutes	0	20	40	0	20	40	0	20	40	0	20	40	0	20	40	0	20	40

Elevation inches

0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0 1/8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0 1/4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0 3/8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0 1/2	10	10	10	10	10	10	10	10	10	0	0	0	0	0	0	0	0	0
0 5/8	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
0 3/4	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
0 7/8	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
1 0	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
1 1/8	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
1 1/4	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
1 3/8	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
1 1/2	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
1 5/8	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
1 3/4	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
1 7/8	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
2 0	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
2 1/8	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
2 1/4	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
2 3/8	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
2 1/2	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110
2 5/8	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110
2 3/4	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120
2 7/8	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120
3 0	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130
3 1/8	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140
3 1/4	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140
3 3/8	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
3 1/2	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
3 5/8	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160
3 3/4	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160
3 7/8	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170
4 0	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170
4 1/8	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180
4 1/4	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180
4 3/8	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190
4 1/2	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190
4 5/8	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
4 3/4	220	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
4 7/8	230	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210
5 0	240	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210

Curvature

degrees	12	12	12	13	13	13	14	14	14	15	15	15	16	16	16
minutes	0	20	40	0	20	40	0	20	40	0	20	40	0	20	40

Elevation inches

0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0 1/8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0 1/4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0 3/8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0 1/2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0 5/8	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
0 3/4	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
0 7/8	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
1 0	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
1 1/8	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
1 1/4	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
1 3/8	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
1 1/2	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
1 5/8	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
1 3/4	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
1 7/8	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
2 0	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
2 1/8	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
2 1/4	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
2 3/8	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
2 1/2	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110
2 5/8	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110
2 3/4	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120
2 7/8	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120
3 0	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130
3 1/8	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140
3 1/4	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140
3 3/8	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
3 1/2	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
3 5/8	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160
3 3/4	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160
3 7/8	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170
4 0	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170
4 1/8	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180
4 1/4	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180
4 3/8	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190
4 1/2	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190
4 5/8	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
4 3/4	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
4 7/8	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210
5 0	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210

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Appendix E

Detailed Segment Descriptions

Northern Columbia Basin Rail Project

Appendix E
Detailed Segment Descriptions

The following provides a detailed description of the route locations and design for each segment. Following these descriptions are conceptual engineering drawings for each segment. Track profiles are also included.

Descriptions reference information pertaining to the segment cost estimates. Detailed cost estimates for each segment are presented in **Appendix G** of this document.

Segment 1

Several variations of the preferred alignment, called hereafter Segment 1 Alternatives, were considered because of their operational differences and other know existing conditions. Alternate 1 provides a different connection point, and connection configuration than that of the preferred alignment. This alignment provides a "through route" type configuration that would allow a train movement from Columbia Basin Railroad's Warden Terminal to Grant County International Airport without a shove move or moving a locomotive consist from one end of the train to the other to make the run. The line also avoids the curves, grades and congestion of Scalley Lead portion of the preferred route. The line, of course, is longer and therefore more costly to build. This segment starts at the Wheeler Yard and makes a bee line due west, essentially on the "half section" line. The line first bisects a large active irrigation circle and then crosses Road N NE at a signalized grade crossing. Alternate 1 then continues due west and joins the preferred route east of Road L NE.

Alternate 3 provides an option of going further south in the area of the small industrial park located south of the municipal airport and thereby avoiding the structures that are in the preferred alignment route. This route does require at least one additional grade crossing and possibly two. Alternate 3 also provides an alternate route at the very west end of Segment 1 that allows for a more northerly alignment crossing of Parker Horn/Crab Creek.

Preferred Alternative

Segment 1 generally follows the proposed alignment shown in the *2003 Task Force Study*. This route has been suggested because it is the most direct, and therefore the shortest route to connect the CBRW rail line at Wheeler with the existing line at the Grant County International Airport (Segment 3).

The Preferred Route connects to an industrial lead track, sometimes referred to as the Scalley Lead, on the east end. This lead is connected to the Columbia Basin Railroad's main line at the station of Wheeler. The track is constructed with 90 and 100 pound rail, and has two approximately twelve degree (about 477' radius), back to back curves, and grades that are 4-plus percent for short distances. The lead is approximately 1.5 miles long. At the existing west end of the lead, there are three tracks. The north and south tracks are currently used by rail shippers. The proposed line ties on to the middle track at this location and generally heads west. The track swings slightly north and thereby bisects an existing quarter section, irrigation circle, then proceeds west and crosses Road L NE at a signalized grade crossing. The line in this area is undulating, in very small cuts and fills and grades not exceeding 0.71 percent. It also passes through minor irrigation facilities and farm access roads. The line continues west, traversing small industrial properties just south of the Moses Lake Municipal Airport. The line then crosses through an above grade irrigation canal. The line continues west into current agricultural land and would enter a significant (20-feet deep) excavation (cut) and start descending at a 1.7 percent grade. As the line turns north the track returns to grade and is in alternating small cuts and fills as the line turns to the west again. The line would then cross Road K at-grade, at a signalized crossing, just south of Road 4 NE, where the grade flattens slightly from the maximum 1.7 percent grade found on this segment. The line then sweeps to the south and then again to the west and comes parallel and just north of State Route 17. The line crosses Parker Horn on a combination fill and bridge structure (similar in configuration to SR17) and then swings slightly more to the north and connects to south east end of Segment 3.

The Segment 1 alternatives all traverse a combination of land zoned heavy industrial, light industrial, and agricultural. The Preferred Rout almost entirely falls in land zoned heavy or light industrial, but is much of this land is in agriculture production.

Segment 2

Segment 2 runs generally from the north end of Segment 3 to the north east to provide railroad access to the east side of the Grant County International Airport (and possibly beyond using Segment 5). This segment follows the general alignment suggested in the in the *2003 Task Force Study*. The rail line crosses Randolph Road about 2000 feet east of the intersection of Randolph and 22nd Street. The line generally follows Randolph Road. as it swings to the north around the east side of the airport. The line then swings east and re-crosses Randolph Road about 500 feet north of Tyndall Road. From there the line curves to the north and continues north about 6000 feet before terminating. The curves on the line are limited to 7degree-30minute

(764' radius) curves with the exception of the existing included 9 degree-30 minute (603' radius) curve. The grade on this segment does not exceed 0.5 percent. The estimate includes grade crossing signalization at the two crossings of Randolph Road and enough grade crossing surface for two additional 32-foot industry access grade crossings. The track traverses primarily land zoned urban heavy industrial.

Segment 3

Segment 3 consists of almost four miles of existing track (not including numerous industry spurs at the Grant County International Airport) that was originally built by the military to access Larson Air Force Base (now Grant County Airport). The track connected at Moses Lake to the then Milwaukee, St. Paul and Pacific Railroad (Milwaukee Road). The track is constructed with mostly 80 and 85 pound rail with small segments of 90 pound and 75 pound rail. Some of the grade crossings have 112 pound and 131 pound rail. The line segment has five private grade crossings and eleven public crossings, two of which are signalized. There are no bridge structures. The track is mostly tangent (straight) and is in fair to very poor condition. The one "main track" curve at the north end of the line is a 6 degree (955'radius) curve. The profile is undulating and has grades up to 1.3 percent.

The track is currently operated as "FRA excepted track". Excepted track, as established by the Federal Railroad Administration (FRA), is a track that a track owner desires to operate that may not meet the FRA Track Safety Standards for any (other) Class of Track. Owners usually designate a track "excepted track" because of poor track structure conditions. On so designated track, owners can operate freight trains (not passenger trains), not containing more than five hazardous material cars, at 10 miles per hour (mph) maximum speed. The proposed upgrade of this segment consists primarily of replacement of rail and other track materials (OTM) to a minimum 5.5 inch base rail section (110 pound and heavier), 33 percent tie replacement, and surfacing. This would allow the line to be "286k capable" which means this line could be expected to capably handle 286,000 pound cars without degradation of the track structure. An allowance for grade crossings upgrades was also included. Although the two signalized grade crossings (Stratford Road and Harris Road) are in good to excellent condition and would not require upgrades. With these upgrades this portion could easily meet FRA Track Safety Standards for Class 2, which would allow the line to be operated at 25 mph. The existing alignment and general profile would not be changed.

Segment 4

Segment 4 consists of approximately seven miles of former Milwaukee Road track, built in approximately 1920. After 1980 the rail line was operated by the BNSF and since 1987 has been operated by the Washington Central

Railroad Company and its successor, the Columbia Basin Railroad. The track is constructed with mostly 85 and 90 pound rail with small segments of 80 pound and 60 pound rail. Some of the grade crossings have rail up to 112 pound.

There are three bridges. The first at near MP 12.4 crosses Interstate 90. This ballast deck – deck girder bridge is in very good condition due to its raising and related rehabilitation work performed in 2001. The second, located at approximately MP 13.4 is a very short, all timber structure that crosses Pelican Horn and is in only fair condition. The third is a larger pile timber structure that crosses Parker Horn near MP 16 and is again in only fair condition. The line segment has eight private grade crossings, ten public crossings, three of which are signalized. The south portion of the line is in fair condition and has received recent minimal maintenance including change out of 1300 each crossties as recent as 2001. The northern portion is in generally very poor condition. The northern portion of the line also runs through very congested publicly accessed areas. This segment was built with curves not exceeding 6 degrees and grades up to 1.5 percent although the majority of the segment has grades less that 1 percent. The entire segment is operated as "FRA excepted track".

The work to abandon this segment consists of removal of track, turnouts (switches), and signal equipment. Included is the credit of salvage for the steel and landscape or better ties, and cost of disposal of rotten ties. No allowance for credit on signal materials was included. Also included is an allowance to repair each public grade crossing. The bridges on the line would be left in place. Real estate is not considered.

Segment 5

Segment 5 runs generally north and west as an extension of proposed Segment 2 to reach the BNSF's east- west running mainline at Soap Lake. Segment 5 runs north before heading west, and then runs west, about 2500 feet south of Road 10 NE to almost the north end of the long run way at the Grant County International Airport. At this point the line swings north and west and crosses Road 10 NE. The line then proceeds in a generally north west direction with alignment dictated by desired maximum grade, uniformity in the profile and the desire to keep earthwork quantities to a minimum. The line proceeds north and crosses Road C NE and Road B.5 NE. About two miles south of the proposed connection point, three turnouts are used in the arrangement of a yard lead, to provide south access to 3 each 7400 feet interchange and storage tracks. The main track (and the tracks just described) parallel each other and continue to the north to another three turnout lead configuration. Just north of that point, another turnout provides a "wye" arrangement of 2 each tracks –

one leading to the west and one to the east – where these track are connected with two additional turnouts in the BNSF's mainline. This track would allow a BNSF train from either direction to quickly "clear" the mainline and perform switching clear of the mainline and "arrange" another train for east or west bound movement on the mainline. These tracks would allow the Columbia Basin Railroad or other designated operator to leave and pickup cars, again entirely clear of the BNSF's mainline. The curves on the line are limited to 7degree-30minute (764' radius) curves at the ends and 3 degrees (1910' radius) in the middle. The grade on this segment does not exceed 0.5 percent. This segment primarily traverses very dry, desolate and undeveloped land. The right of way costs clearly indicate this.

Segment 5b

Segment 5b runs generally north and mostly west as an extension of proposed Segment 2 to reach the BNSF's east- west running mainline at a point about 2 miles east of Quincy Washington. Curves were limited to 7 degree 30 minute and grades did not exceed 1.12 percent. Segment 5b runs similar to 5 in the first few miles. It ties on to Segment 2 at MP 3.6 then heads north before heading west, and then runs west, about 2500 feet south of Road 10 NE to almost the north end of the long run way at Grant Co. Airport. At this point the line swings north and west and crosses Road 10 NE at MP 6.4. From this point the line climbs a 0.8 percent grade for approx 1.5 miles in cuts and f ills up to 15 feet in height. The line then proceeds in a generally west then north and west direction with alignment dictated by trying to limit the grade. The grade is limited to 0.2 percent to about MP 11. At this point the line begins to descend at 1 percent for 1.3 miles. At about MP 13 the line swings around to the southwest. The grade in this area relaxes to 0.55 percent, but at MP13.5 the grade increases to 0.88 percent, until it crosses SR 17 at grade. The line then immediately crosses the Rocky Ford Creek at MP14.5 and begins to climb at 0.22 percent as the line heads almost due south. At MP 15.1 the line begins climbs the steepest grade on the segment of 1.12 percent for about 1 mile and goes through the largest cut on the line of about 30 feet deep. The line then swings around and heads north and west while climbing at 0.76% and traversing a 25 foot fill. At MP 17.7 the grade relaxes slightly to 0.61 percent. At near MP 19 the line turns to the west then south and runs about 1 mile before turning west, then crosses Road "A NW" at about MP 20.2. The line climbs to a summit at MP 21.3. As the line continues west and south again the line descends at 0.76 percent and begins run though rural and agricultural areas. At MP 22.8 the line crosses a significant irrigation canal then immediately crosses Dodson Road. The line continues to descend at 0.48 percent for the next two miles as it run through cuts and fills of about 25 feet. At MP 23.5 the line begins to swing west and slightly north before running almost due west to Quincy. After the line crosses Rd "E" near MP 25 and the grade relaxes to 0.04 percent. The line crosses SR 283 at grade near MP 25.5. The line crosses other private undeveloped roads and crosses another

irrigation canal near MP 27.2. The line crosses Road "H" near MP 28. At MP 29.1 another irrigation canal / wasteway is crossed and the grade turns to 0.62 percent ascending while on a 20 foot fill. The line then crosses Road "J.5" and another canal before the grade flattens to 0.05 percent. The line crosses Road "K" about MP 31.1 and SR 28 at MP 31.2. The line continues generally west with grades not exceeding 0.24 percent to the single turnout connection with the BNSF mainline at MP 34.3. The line crosses three additional road is this area Roads "L", "M" and "10.9". The segment traverses a combination of undeveloped, agricultural, rural residential and rural industrial land. About half of the distance is undeveloped land, with about one third being agricultural and the remaining portion being either rural residential or industrial. There are between 90 and 100 parcels that are impacted by the segment. The segment does not have any grade separations structures and no significant bridges. There are four signalized grade crossings that include the three State Routes and Dodson Road.

Appendix F

Right of Way Cost Development Methodology

Northern Columbia Basin Rail Project

Appendix F
Methodology for Calculating Right of Way Costs

The project team did a preliminary study of Segment 1 (including various alternatives discussed in the *2003 Moses Lake Task Force Study*), Segment 2 and Segment 5 to estimate the number of parcels that will need to be acquired and the cost of acquiring the new right of way (ROW) based on a 100 foot ROW width. This study was done with very limited information and without the benefit of a site visit, title reports, ROW plans, parcel maps to scale, or verified comparable sales. This report should not be construed as an appraisal or used to value any individual property. It is simply a statistical analysis of available local data to estimate potential costs for the project to evaluate potential routes.

The data utilized included parcel and assessment data from Grant County and the city of Moses Lake, along with other resources available on-line, discussions with the Industrial Development Manager for the Port of Moses Lake, and excerpts from the Port's 1996 appraisal of Port properties. Discussions were also held with a local realtor, Ralph Kincaid, who is familiar with the project and currently the President of the Grant County Economic Council.

There was not adequate local sales data available to value many of the property types with any degree of certainty. The 1996 Port of Moses Lake appraisal confirms this issue by going to other Eastern Washington Port sites to obtain their comparable sales data. The project team assumed that no buildings will be impacted by any of the alignments and we did not try to evaluate individual parcels that could be acquisitions of entire parcels due to severance damages.

The limits of the information used to complete this study impact the degree of accuracy of the research findings. Since the project team had to construct its own ownership parcel map the number of parcels per route could vary significantly. As such, the information will need to be updated as more information and detailed engineering is made available. It is also recommended that a more detailed cost estimate be performed with the assistance of an appraiser who could supply relevant comparable sales data from both the local, regional, and specialty markets.

Right of way staff costs were estimated in addition to estimating preliminary real estate costs for the acquisition of the needed new right of way on a per parcel basis. This right of way staff cost estimate is also preliminary and is based on the assumption that there will be no complex acquisitions involving substantial improvements or severance damages or relocations of residents or businesses caused by this project. If any of those were to occur this cost could increase. The following provides the calculations and estimates used for this study.

Title $350 + Appraisal $2500 + Review $1400 + $8,750 Acquisition Services = $13,000.00/parcel. Condemnation costs were estimated at ten percent of the combined cost of the real estate and staff costs.

Segment 1 Preferred (yellow line)

Parcels	Use	Total Area	Land Value Estimate	Total Value
9	Industrial	15 AC	$40,000/AC	$600,000
4	Agricultural	31 AC	3,000/AC	93,000
13		46 AC x	$15,065/AC =	$693,000

Real Estate $693,000 + Staff costs $169,000 + Condemnation $86,200 = $948,200

Segment 1 Alternative 1 (North blue line + yellow central + blue West end)

Parcels	Use	Total Area	Land Value Estimate	Total Value
10	Industrial	18 AC	$40,000/AC	$720,000
2	Suburban Acres	4 AC	40,000/AC	160,000
10	Agricultural	48 AC	3,000/AC	144,000
22		70 x	$14,630/AC =	$1,024,000

Real Estate $1,024,000 + Staff costs $286,000 + Condemnation $131,000 = $1,441,000

Segment 1 Alternative 3 (yellow east +South blue line +yellow central +blue West)

Parcels	Use	Total Area	Land Value Estimate	Total Value
11	Industrial	21 AC	$40,000/AC	$840,000
2	Suburban	4 AC	$40,000/AC	160,000
5	Agricultural	27 AC	3,000/AC	81,000
18		52 AC x	$20,800/AC =	$1,081,000

Real Estate $1,081,000 + Staff costs $234,000 + Condemnation $131,500 = $1,446,500

Segment 2 (South Airport to middle West side airport)

Parcels	Use	Total Area	Land Value Estimate	Total Value
5	Industrial	14 AC	$40,000/AC	$560,000
8	Aircraft Transport	28 AC	40,000/AC	1,120,000

1	Gov Services	3 AC		40,000/AC		120,000
1	Undeveloped (IND)	9 AC		10,000/AC		90,000
15		54 AC	x	$35,000/AC	=	$1,890,000

Real Estate $1,890,000 + Staff costs $195,000 + Condemnation $208,500 = $2.293,500

Segment 5 (middle west side airport to N existing RR)

Parcels	Use	Total Area		Land Value Estimate		Total Value
6	Industrial	28 AC		$40,000/AC		$1,120,000
1	Airport Transport	6 AC		40,000/AC		240,000
24	Undeveloped	150 AC		1,000/AC		150,000
3	Agricultural	20 AC		2,000/AC		40,000
2	Suburban Acres	2 AC		1,000/AC		2,000
36		206 AC	x	7535/AC	=	$1,552,000

Real Estate $1,552,000 + Staff costs $468,000 + Condemnation $202,200 = $2,222,200

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Appendix G

Capital Cost Estimates (in 2005 Dollars)

Northern Columbia Basin Rail Project

Construction Cost Estimate
North Columbia Basin Railroad Study

Segment 1 Preferred Option

Track Improvements					
ITEM	**UNIT**	**UNIT PRICE**	**QTY.**	**AMOUNT**	**SUBTOTAL**
Mobilization Etc.					**$ 983,000**
Mobilization	LS	$ 35,000.00	1	$ 35,000	
Real Estate Purchase	LS	$ 948,200.00	1	$ 948,200	
Track-Related Earthwork					**$ 1,426,000**
Clear & Grub	AC	$ 3,000.00	45	$ 135,000	
Remove Structures	EA	$ 3,000.00	2	$ 6,000	
Excavation to Waste (Incl. Haul)	CY	$ 8.50	59551	$ 506,184	
Fill from Excavation	CY	$ 5.00	50545	$ 252,725	
Fill from Borrow	CY	$ 15.00		$ -	
Subballast	CY	$ 28.00	18778	$ 525,784	
Track					**$ 2,129,000**
Install 115 LB Ballasted Track	TF	$ 85.00	19531	$ 1,660,135	
Install No. 11 T.O Hand Throw (HT)	EA	$125,000		$ -	
Install No. 9 T.O Hand Throw (HT)	EA	$34,000		$ -	
Shift Track	TF	$ 28.00		$ -	
Track Removal	TF	$ 11.00		$ -	
Track Rehab	TF	$ 50.00		$ -	
Track Relay & Shoulder Improvements	TF	$ 70.00		$ -	
Grade Crossing Signals	EA	$ 120,000.00	3	$ 360,000	
Concrete Grade Crossing	TF	$ 800.00	136	$ 108,800	
Timber Grade Crossing	TF	$ 140.00		$ -	
Structures					**$ 988,000**
Bridge	LF	$ 5,500.00	125	$ 687,500	
Irrigation Water Box Siphons	EA	$ 50,000.00	6	$ 300,000	
Drainage					**$ 7,000**
24" RCP Class V	LF	$ 40.00	180	$ 7,200	
36" RCP Class V	LF	$ 60.00		$ -	
54" RCP Class V	LF	$ 280.00		$ -	
64" RCP Class V	LF	$ 350.00		$ -	
Utilities					**$ 154,000**
Phone Accom	EA	$ 5,000.00	2	$ 10,000	
Water Accom	EA	$ 25,000.00	2	$ 50,000	
Gas Accom	EA	$ 10,000.00		$ -	
Sewer Accom	EA	$ 25,000.00	2	$ 50,000	
UG Power Accom	EA	$ 12,000.00	1	$ 12,000	
OH Power Accom	EA	$ 8,000.00	4	$ 32,000	
Contingencies (30%)			30%		**$ 1,706,000**
Environmental Mitigation			10%		**$ 470,000**
Construction Subtotal					**$ 7,863,000**
Engineering Design (7%)			7.0%		**$ 550,000**
Construction Management (6%)			6.0%		**$ 472,000**
Sales Tax			8.8%		**$ 692,000**
TOTAL					**$ 9,577,000**

Notes:
1) subtotals rounded to nearest 1,000s
2) Estimate in 2005 dollars

Construction Cost Estimate
North Columbia Basin Railroad Study

Segment 1 Alternative 3

Track Improvements					
ITEM	**UNIT**	**UNIT PRICE**	**QTY.**	**AMOUNT**	**SUBTOTAL**
Mobilization Etc.					**$ 1,482,000**
Mobilization	LS	$ 35,000.00	1	$ 35,000	
Real Estate Purchase	LS	$ 1,446,500.00	1	$ 1,446,500	
Track-Related Earthwork					**$ 1,410,000**
Clear & Grub	AC	$ 3,000.00	44	$ 132,000	
Remove Structures	EA	$ 3,000.00		$ -	
Excavation to Waste (Incl. Haul)	CY	$ 8.50	44488	$ 378,148	
Fill from Excavation	CY	$ 5.00	76111	$ 380,555	
Fill from Borrow	CY	$ 15.00		$ -	
Subballast	CY	$ 28.00	18537	$ 519,036	
Track					**$ 2,095,000**
Install 115 LB Ballasted Track	TF	$ 85.00	19212	$ 1,633,020	
Install No. 11 T.O Hand Throw (HT)	EA	$125,000		$ -	
Install No. 9 T.O Hand Throw (HT)	EA	$34,000		$ -	
Shift Track	TF	$ 28.00		$ -	
Track Removal	TF	$ 11.00		$ -	
Track Rehab	TF	$ 50.00		$ -	
Track Relay & Shoulder Improvements	TF	$ 70.00		$ -	
Grade Crossing Signals	EA	$ 120,000.00	3	$ 360,000	
Concrete Grade Crossing	TF	$ 800.00	128	$ 102,400	
Timber Grade Crossing	TF	$ 140.00		$ -	
Structures					**$ 1,075,000**
Bridge	LF	$ 5,500.00	150	$ 825,000	
Irrigation Water Box Siphons	EA	$ 50,000.00	5	$ 250,000	
Drainage					**$ 11,000**
24" RCP Class V	LF	$ 40.00	270	$ 10,800	
36" RCP Class V	LF	$ 60.00		$ -	
54" RCP Class V	LF	$ 280.00		$ -	
64" RCP Class V	LF	$ 350.00		$ -	
Utilities					**$ 184,000**
Phone Accom	EA	$ 5,000.00	3	$ 15,000	
Water Accom	EA	$ 25,000.00	2	$ 50,000	
Gas Accom	EA	$ 10,000.00		$ -	
Sewer Accom	EA	$ 25,000.00	3	$ 75,000	
UG Power Accom	EA	$ 12,000.00	1	$ 12,000	
OH Power Accom	EA	$ 8,000.00	4	$ 32,000	
Contingencies (30%)			30%		**$ 1,877,000**
Environmental Mitigation			10%		**$ 478,000**
Construction Subtotal					**$ 8,612,000**
Engineering Design (7%)			7.0%		**$ 603,000**
Construction Management (6%)			6.0%		**$ 517,000**
Sales Tax			8.8%		**$ 758,000**
TOTAL					**$ 10,490,000**

Notes:
1) subtotals rounded to nearest 1,000s
2) Estimate in 2005 dollars

Construction Cost Estimate
North Columbia Basin Railroad Study

Segment 1 Alternative 1 + Preferred

Track Improvements					
ITEM	**UNIT**	**UNIT PRICE**	**QTY.**	**AMOUNT**	**SUBTOTAL**
Mobilization Etc.					**$ 1,476,000**
Mobilization	LS	$ 35,000.00	1	$ 35,000	
Real Estate Purchase	AC	$ 1,441,000.00	1	$ 1,441,000	
Track-Related Earthwork					**$ 2,066,000**
Clear & Grub	AC	$ 3,000.00	63	$ 189,000	
Remove Structures	EA	$ 3,000.00		$ -	
Excavation to Waste (Incl. Haul)	CY	$ 8.50	72702	$ 617,967	
Fill from Excavation	CY	$ 5.00	103031	$ 515,155	
Fill from Borrow	CY	$ 15.00		$ -	
Subballast	CY	$ 28.00	26571	$ 743,988	
Track					**$ 2,968,000**
Install 115 LB Ballasted Track	TF	$ 85.00	27619	$ 2,347,615	
Install No. 11 T.O Hand Throw (HT)	EA	$125,000		$ -	
Install No. 9 T.O Hand Throw (HT)	EA	$34,000		$ -	
Shift Track	TF	$ 28.00		$ -	
Track Removal	TF	$ 11.00		$ -	
Track Rehab	TF	$ 50.00		$ -	
Track Relay & Shoulder Improvements	TF	$ 70.00		$ -	
Grade Crossing Signals	EA	$ 120,000.00	4	$ 480,000	
Concrete Grade Crossing	TF	$ 800.00	176	$ 140,800	
Timber Grade Crossing	TF	$ 140.00		$ -	
Structures					**$ 1,038,000**
Bridge	LF	$ 5,500.00	125	$ 687,500	
Irrigation Water Box Siphons	EA	$ 50,000.00	7	$ 350,000	
Drainage					**$ 7,000**
24" RCP Class V	LF	$ 40.00	180	$ 7,200	
36" RCP Class V	LF	$ 60.00		$ -	
54" RCP Class V	LF	$ 280.00		$ -	
64" RCP Class V	LF	$ 350.00		$ -	
Utilities					**$ 192,000**
Phone Accom	EA	$ 5,000.00	2	$ 10,000	
Water Accom	EA	$ 25,000.00	2	$ 50,000	
Gas Accom	EA	$ 10,000.00	1	$ 10,000	
Sewer Accom	EA	$ 25,000.00	2	$ 50,000	
UG Power Accom	EA	$ 12,000.00	2	$ 24,000	
OH Power Accom	EA	$ 8,000.00	6	$ 48,000	
Contingencies (30%)			30%		**$ 2,324,000**
Environmental Mitigation			10%		**$ 627,000**
Construction Subtotal					**$ 10,698,000**
Engineering Design (7%)			7.0%		**$ 749,000**
Construction Management (6%)			6.0%		**$ 642,000**
Sales Tax			8.8%		**$ 941,000**
TOTAL					**$ 13,030,000**

Notes:
1) subtotals rounded to nearest 1,000s
2) Estimate in 2005 dollars

Construction Cost Estimate
North Columbia Basin Railroad Study

Segment 1 Preferred + Alternate 3

Track Improvements					
ITEM	**UNIT**	**UNIT PRICE**	**QTY.**	**AMOUNT**	**SUBTOTAL**
Mobilization Etc.					**$ 1,476,000**
Mobilization	LS	$ 35,000.00	1	$ 35,000	
Real Estate Purchase	LS	$ 1,441,000.00	1	$ 1,441,000	
Track-Related Earthwork					**$ 1,485,000**
Clear & Grub	AC	$ 3,000.00	45	$ 135,000	
Remove Structures	EA	$ 3,000.00	2	$ 6,000	
Excavation to Waste (Incl. Haul)	CY	$ 8.50	71232	$ 605,472	
Fill from Excavation	CY	$ 5.00	42589	$ 212,945	
Fill from Borrow	CY	$ 15.00		$ -	
Subballast	CY	$ 28.00	18778	$ 525,784	
Track					**$ 2,129,000**
Install 115 LB Ballasted Track	TF	$ 85.00	19531	$ 1,660,135	
Install No. 11 T.O Hand Throw (HT)	EA	$125,000		$ -	
Install No. 9 T.O Hand Throw (HT)	EA	$34,000		$ -	
Shift Track	TF	$ 28.00		$ -	
Track Removal	TF	$ 11.00		$ -	
Track Rehab	TF	$ 50.00		$ -	
Track Relay & Shoulder Improvements	TF	$ 70.00		$ -	
Grade Crossing Signals	EA	$ 120,000.00	3	$ 360,000	
Concrete Grade Crossing	TF	$ 800.00	136	$ 108,800	
Timber Grade Crossing	TF	$ 140.00		$ -	
Structures					**$ 1,125,000**
Bridge	LF	$ 5,500.00	150	$ 825,000	
Irrigation Water Box Siphons	EA	$ 50,000.00	6	$ 300,000	
Drainage					**$ 7,000**
24" RCP Class V	LF	$ 40.00	180	$ 7,200	
36" RCP Class V	LF	$ 60.00		$ -	
54" RCP Class V	LF	$ 280.00		$ -	
64" RCP Class V	LF	$ 350.00		$ -	
Utilities					**$ 154,000**
Phone Accom	EA	$ 5,000.00	2	$ 10,000	
Water Accom	EA	$ 25,000.00	2	$ 50,000	
Gas Accom	EA	$ 10,000.00		$ -	
Sewer Accom	EA	$ 25,000.00	2	$ 50,000	
UG Power Accom	EA	$ 12,000.00	1	$ 12,000	
OH Power Accom	EA	$ 8,000.00	4	$ 32,000	
Contingencies (30%)			30%		**$ 1,913,000**
Environmental Mitigation			10%		**$ 490,000**
Construction Subtotal					**$ 8,779,000**
Engineering Design (7%)			7.0%		**$ 615,000**
Construction Management (6%)			6.0%		**$ 527,000**
Sales Tax			8.8%		**$ 773,000**
TOTAL					**$ 10,694,000**

Notes:
1) subtotals rounded to nearest 1,000s
2) Estimate in 2005 dollars

Construction Cost Estimate
North Columbia Basin Railroad Study

Segment 1 Alternative 1 + Preferred + Alternate 3

Track Improvements					
ITEM	**UNIT**	**UNIT PRICE**	**QTY.**	**AMOUNT**	**SUBTOTAL**
Mobilization Etc.					**$ 1,476,000**
Mobilization	LS	$ 35,000.00	1	$ 35,000	
Real Estate Purchase	LS	$ 1,441,000.00	1	$ 1,441,000	
Track-Related Earthwork					**$ 2,478,000**
Clear & Grub	AC	$ 3,000.00	64	$ 192,000	
Remove Structures	EA	$ 3,000.00		$ -	
Excavation to Waste (Incl. Haul)	CY	$ 8.50	84383	$ 717,256	
Fill from Excavation	CY	$ 5.00	95075	$ 475,375	
Fill from Borrow	CY	$ 15.00		$ -	
Subballast	CY	$ 28.00	39034	$ 1,092,952	
Track					**$ 2,974,000**
Install 115 LB Ballasted Track	TF	$ 85.00	27683	$ 2,353,055	
Install No. 11 T.O Hand Throw (HT)	EA	$125,000		$ -	
Install No. 9 T.O Hand Throw (HT)	EA	$34,000		$ -	
Shift Track	TF	$ 28.00		$ -	
Track Removal	TF	$ 11.00		$ -	
Track Rehab	TF	$ 50.00		$ -	
Track Relay & Shoulder Improvements	TF	$ 70.00		$ -	
Grade Crossing Signals	EA	$ 120,000.00	4	$ 480,000	
Concrete Grade Crossing	TF	$ 800.00	176	$ 140,800	
Timber Grade Crossing	TF	$ 140.00		$ -	
Structures					**$ 1,175,000**
Bridge	LF	$ 5,500.00	150	$ 825,000	
Irrigation Water Box Siphons	EA	$ 50,000.00	7	$ 350,000	
Drainage					**$ 7,000**
24" RCP Class V	LF	$ 40.00	180	$ 7,200	
36" RCP Class V	LF	$ 60.00		$ -	
54" RCP Class V	LF	$ 280.00		$ -	
64" RCP Class V	LF	$ 350.00		$ -	
Utilities					**$ 192,000**
Phone Accom	EA	$ 5,000.00	2	$ 10,000	
Water Accom	EA	$ 25,000.00	2	$ 50,000	
Gas Accom	EA	$ 10,000.00	1	$ 10,000	
Sewer Accom	EA	$ 25,000.00	2	$ 50,000	
UG Power Accom	EA	$ 12,000.00	2	$ 24,000	
OH Power Accom	EA	$ 8,000.00	6	$ 48,000	
Contingencies (30%)			30%		**$ 2,491,000**
Environmental Mitigation			10%		**$ 683,000**
Construction Subtotal					**$ 11,476,000**
Engineering Design (7%)			7.0%		**$ 803,000**
Construction Management (6%)			6.0%		**$ 689,000**
Sales Tax			8.8%		**$ 1,010,000**
TOTAL					**$ 13,978,000**

Notes:
1) subtotals rounded to nearest 1,000s
2) Estimate in 2005 dollars

Construction Cost Estimate
North Columbia Basin Railroad Study

Segment 2

Track Improvements					
ITEM	**UNIT**	**UNIT PRICE**	**QTY.**	**AMOUNT**	**SUBTOTAL**
Mobilization Etc.					**$ 2,329,000**
Mobilization	LS	$ 35,000.00	1	$ 35,000	
Real Estate Purchase	LS	$ 2,293,500.00	1	$ 2,293,500	
Track-Related Earthwork					**$ 1,213,000**
Clear & Grub	AC	$ 3,000.00	44	$ 132,000	
Remove Structures	EA	$ 3,000.00		$ -	
Excavation to Waste (Incl. Haul)	CY	$ 8.50	23440	$ 199,240	
Fill from Excavation	CY	$ 5.00	74259	$ 371,295	
Fill from Borrow	CY	$ 15.00		$ -	
Subballast	CY	$ 28.00	18248	$ 510,944	
Track					**$ 1,960,000**
Install 115 LB Ballasted Track	TF	$ 85.00	19000	$ 1,615,000	
Install No. 11 T.O Hand Throw (HT)	EA	$125,000		$ -	
Install No. 9 T.O Hand Throw (HT)	EA	$34,000		$ -	
Shift Track	TF	$ 28.00		$ -	
Track Removal	TF	$ 11.00		$ -	
Track Rehab	TF	$ 50.00		$ -	
Track Relay & Shoulder Improvements	TF	$ 70.00		$ -	
Grade Crossing Signals	EA	$ 120,000.00	2	$ 240,000	
Concrete Grade Crossing	TF	$ 800.00	120	$ 96,000	
Timber Grade Crossing	TF	$ 140.00	64	$ 8,960	
Structures					**$ -**
Bridge	LF	$ 5,500.00	0	$ -	
Irrigation Water Box Siphons	EA	$ 50,000.00	0	$ -	
Drainage					**$ 10,000**
24" RCP Class V	LF	$ 40.00	240	$ 9,600	
36" RCP Class V	LF	$ 60.00		$ -	
54" RCP Class V	LF	$ 280.00		$ -	
64" RCP Class V	LF	$ 350.00		$ -	
Utilities					**$ 247,000**
Phone Accom	EA	$ 5,000.00	3	$ 15,000	
Water Accom	EA	$ 25,000.00	3	$ 75,000	
Gas Accom	EA	$ 10,000.00	3	$ 30,000	
Sewer Accom	EA	$ 25,000.00	3	$ 75,000	
UG Power Accom	EA	$ 12,000.00	3	$ 36,000	
OH Power Accom	EA	$ 8,000.00	2	$ 16,000	
Contingencies (30%)			30%		**$ 1,728,000**
Environmental Mitigation			5%		**$ 172,000**
Construction Subtotal					**$ 7,659,000**
Engineering Design (7%)			7.0%		**$ 536,000**
Construction Management (6%)			6.0%		**$ 460,000**
Sales Tax			8.8%		**$ 674,000**
TOTAL					**$ 9,329,000**

Notes:
1) subtotals rounded to nearest 1,000s
2) Estimate in 2005 dollars

Construction Cost Estimate
North Columbia Basin Railroad Study

Segment 3

Track Improvements					
ITEM	**UNIT**	**UNIT PRICE**	**QTY.**	**AMOUNT**	**SUBTOTAL**
Mobilization Etc.					**$ 35,000**
Mobilization	LS	$ 35,000.00	1	$ 35,000	
Real Estate Purchase	AC	$ 20,000.00		$ -	
Track-Related Earthwork					**$ -**
Clear & Grub	AC	$ 3,000.00		$ -	
Remove Structures	EA	$ 3,000.00		$ -	
Excavation to Waste (Incl. Haul)	CY	$ 8.50		$ -	
Fill from Excavation	CY	$ 5.00		$ -	
Fill from Borrow	CY	$ 15.00		$ -	
Subballast	CY	$ 28.00		$ -	
Track					**$ 1,246,000**
Install 115 LB Ballasted Track	TF	$ 85.00		$ -	
Install No. 11 T.O Hand Throw (HT)	EA	$125,000		$ -	
Install No. 9 T.O Hand Throw (HT)	EA	$34,000		$ -	
Shift Track	TF	$ 28.00		$ -	
Track Removal	TF	$ 11.00		$ -	
Track Rehab	TF	$ 50.00	20592	$ 1,029,600	
Track Relay & Shoulder Improvements	TF	$ 70.00		$ -	
Grade Crossing Signals	EA	$ 120,000.00	1	$ 120,000	
Concrete Grade Crossing	TF	$ 800.00	120	$ 96,000	
Timber Grade Crossing	TF	$ 140.00		$ -	
Structures					**$ -**
Bridge	LF	$ 5,500.00	0	$ -	
Irrigation Water Box Siphons	EA	$ 50,000.00	0	$ -	
Drainage					**$ -**
24" RCP Class V	LF	$ 40.00		$ -	
36" RCP Class V	LF	$ 60.00		$ -	
54" RCP Class V	LF	$ 280.00		$ -	
64" RCP Class V	LF	$ 350.00		$ -	
Utilities					**$ -**
Phone Accom	EA	$ 5,000.00		$ -	
Water Accom	EA	$ 25,000.00		$ -	
Gas Accom	EA	$ 10,000.00		$ -	
Sewer Accom	EA	$ 25,000.00		$ -	
UG Power Accom	EA	$ 12,000.00		$ -	
OH Power Accom	EA	$ 8,000.00		$ -	
Contingencies (20%)			20%		**$ 256,000**
Environmental Mitigation			5%		**$ 62,000**
Construction Subtotal					**$ 1,599,000**
Engineering Design (3.5%)			3.5%		**$ 56,000**
Construction Management (3%)			3.0%		**$ 48,000**
Sales Tax			8.8%		**$ 141,000**
TOTAL					**$ 1,844,000**

Notes:
1) subtotals rounded to nearest 1,000s
2) Estimate in 2005 dollars

Construction Cost Estimate
North Columbia Basin Railroad Study

Segment 4: Abandonment

Track Improvements					
ITEM	**UNIT**	**UNIT PRICE**	**QTY.**	**AMOUNT**	**SUBTOTAL**
Mobilization Etc.					**$ 35,000**
Mobilization	LS	$ 35,000.00	1	$ 35,000	
Real Estate Purchase	AC	$ 20,000.00		$ -	
Track-Related Earthwork					**$ -**
Clear & Grub	AC	$ 3,000.00		$ -	
Remove Structures	EA	$ 3,000.00		$ -	
Excavation to Waste (Incl. Haul)	CY	$ 8.50		$ -	
Fill from Excavation	CY	$ 5.00		$ -	
Fill from Borrow	CY	$ 15.00		$ -	
Subballast	CY	$ 28.00		$ -	
Track					**$ 195,000**
Demo Crossing	TF	$ 73.00	740	$ 54,020	
Demo Track	TF	$3	44652	$ 133,956	
Demo Turnout	EA	$1,400	5	$ 7,000	
Shift Track	TF	$ 28.00		$ -	
Track Removal	TF	$ 11.00		$ -	
Track Rehab	TF	$ 50.00		$ -	
Track Relay & Shoulder Improvements	TF	$ 70.00		$ -	
Grade Crossing Signals	EA	$ 120,000.00		$ -	
Concrete Grade Crossing	TF	$ 800.00		$ -	
Timber Grade Crossing	TF	$ 140.00		$ -	
Structures					**$ -**
Bridge	LF	$ 5,500.00	0	$ -	
Irrigation Water Box Siphons	EA	$ 50,000.00	0	$ -	
Drainage					**$ -**
24" RCP Class V	LF	$ 40.00		$ -	
36" RCP Class V	LF	$ 60.00		$ -	
54" RCP Class V	LF	$ 280.00		$ -	
64" RCP Class V	LF	$ 350.00		$ -	
Utilities					**$ -**
Phone Accom	EA	$ 5,000.00		$ -	
Water Accom	EA	$ 25,000.00		$ -	
Gas Accom	EA	$ 10,000.00		$ -	
Sewer Accom	EA	$ 25,000.00		$ -	
UG Power Accom	EA	$ 12,000.00		$ -	
OH Power Accom	EA	$ 8,000.00		$ -	
Contingencies (20%)			20%		**$ 46,000**
Environmental Mitigation			5%		**$ 10,000**
Construction Subtotal					**$ 286,000**
Engineering Design (3.5%)			3.5%		**$ 10,000**
Construction Management (3%)			3.0%		**$ 9,000**
Sales Tax			8.8%		**$ 25,000**
TOTAL					**$ 330,000**

Notes:
1) subtotals rounded to nearest 1,000s
2) Estimate in 2005 dollars

Construction Cost Estimate
North Columbia Basin Railroad Study

Segment 4b -McDonald to ML Rehabilitaion, ML to Parker Horn Abandonment

Track Improvements					
ITEM	**UNIT**	**UNIT PRICE**	**QTY.**	**AMOUNT**	**SUBTOTAL**
Mobilization Etc.					**$ 35,000**
Mobilization	LS	$ 35,000.00	1	$ 35,000	
Real Estate Purchase	AC	$ 20,000.00		$ -	
Track-Related Earthwork					**$ -**
Clear & Grub	AC	$ 3,000.00		$ -	
Remove Structures	EA	$ 3,000.00		$ -	
Excavation to Waste (Incl. Haul)	CY	$ 8.50		$ -	
Fill from Excavation	CY	$ 5.00		$ -	
Fill from Borrow	CY	$ 15.00		$ -	
Subballast	CY	$ 28.00		$ -	
Track					**$ 1,453,000**
Demo Crossing	TF	$ 85.00	232	$ 19,720	
Demo Track	TF	$3	10163	$ 30,489	
Demo Turnout	EA	$1,400		$ -	
Shift Track	TF	$ 28.00		$ -	
Track Reconstruction	TF	$ 50.00	5280	$ 264,000	
Track Rehab	TF	$ 37.00	22733	$ 841,121	
Track Relay & Shoulder Improvements	TF	$ 70.00		$ -	
Grade Crossing Signals	EA	$ 120,000.00	1	$ 120,000	
Concrete Grade Crossing	TF	$ 800.00	210	$ 168,000	
Timber Grade Crossing	TF	$ 200.00	48	$ 9,600	
Structures					**$ 24,000**
Bridge	LF	$ 1,500.00	16	$ 24,000	
Irrigation Water Box Siphons	EA	$ 50,000.00	0	$ -	
Drainage					**$ -**
24" RCP Class V	LF	$ 40.00		$ -	
36" RCP Class V	LF	$ 60.00		$ -	
54" RCP Class V	LF	$ 280.00		$ -	
64" RCP Class V	LF	$ 350.00		$ -	
Utilities					**$ -**
Phone Accom	EA	$ 5,000.00		$ -	
Water Accom	EA	$ 25,000.00		$ -	
Gas Accom	EA	$ 10,000.00		$ -	
Sewer Accom	EA	$ 25,000.00		$ -	
UG Power Accom	EA	$ 12,000.00		$ -	
OH Power Accom	EA	$ 8,000.00		$ -	
Contingencies (20%)			20%		**$ 302,000**
Environmental Mitigation			5%		**$ 74,000**
Construction Subtotal					**$ 1,888,000**
Engineering Design (3.5%)			3.5%		**$ 66,000**
Construction Management (3%)			3.0%		**$ 57,000**
Sales Tax			8.8%		**$ 166,000**
TOTAL					**$ 2,177,000**

Notes:
1) subtotals rounded to nearest 1,000s
2) Estimate in 2005 dollars

Segment 4b Rehab includes 50% ties,significant ballast and surface work, crossing and one bridge rehab, but does not include rail replacement
Segment 4b Reconstruction is the siding and industry lead and spurs to 3 customers east of Broadway and includes rail replacement
Grade Crossing Signals are Protection installed on Potato Hill Rd.

Construction Cost Estimate
North Columbia Basin Railroad Study

Segment 4c -ML to Parker Horn Abandonment

Track Improvements					
ITEM	**UNIT**	**UNIT PRICE**	**QTY.**	**AMOUNT**	**SUBTOTAL**
Mobilization Etc.					**$ 25,000**
Mobilization	LS	$ 25,000.00	1	$ 25,000	
Real Estate Purchase	AC	$ 20,000.00		$ -	
Track-Related Earthwork					**$ -**
Clear & Grub	AC	$ 3,000.00		$ -	
Remove Structures	EA	$ 3,000.00		$ -	
Excavation to Waste (Incl. Haul)	CY	$ 8.50		$ -	
Fill from Excavation	CY	$ 5.00		$ -	
Fill from Borrow	CY	$ 15.00		$ -	
Subballast	CY	$ 28.00		$ -	
Track					**$ 50,000**
Demo Crossing	TF	$ 85.00	232	$ 19,720	
Demo Track	TF	$3	10163	$ 30,489	
Demo Turnout	EA	$1,400		$ -	
Shift Track	TF	$ 28.00		$ -	
Track Reconstruction	TF	$ 50.00		$ -	
Track Rehab	TF	$ 37.00		$ -	
Track Relay & Shoulder Improvements	TF	$ 70.00		$ -	
Grade Crossing Signals	EA	$ 120,000.00		$ -	
Concrete Grade Crossing	TF	$ 800.00		$ -	
Timber Grade Crossing	TF	$ 200.00		$ -	
Structures					**$ -**
Bridge	LF	$ 1,500.00		$ -	
Irrigation Water Box Siphons	EA	$ 50,000.00		$ -	
Drainage					**$ -**
24" RCP Class V	LF	$ 40.00		$ -	
36" RCP Class V	LF	$ 60.00		$ -	
54" RCP Class V	LF	$ 280.00		$ -	
64" RCP Class V	LF	$ 350.00		$ -	
Utilities					**$ -**
Phone Accom	EA	$ 5,000.00		$ -	
Water Accom	EA	$ 25,000.00		$ -	
Gas Accom	EA	$ 10,000.00		$ -	
Sewer Accom	EA	$ 25,000.00		$ -	
UG Power Accom	EA	$ 12,000.00		$ -	
OH Power Accom	EA	$ 8,000.00		$ -	
Contingencies (20%)			20%		**$ 15,000**
Environmental Mitigation			10%		**$ 5,000**
Construction Subtotal					**$ 95,000**
Engineering Design (3.5%)			7.0%		**$ 7,000**
Construction Management (3%)			6.0%		**$ 6,000**
Sales Tax			8.8%		**$ 8,000**
TOTAL					**$ 116,000**

Notes:
1) subtotals rounded to nearest 1,000s
2) Estimate in 2005 dollars

Construction Cost Estimate
North Columbia Basin Railroad Study

Segment 4d -McDonald to Parker Horn Rehabilition

Track Improvements

ITEM	UNIT	UNIT PRICE	QTY.	AMOUNT	SUBTOTAL
Mobilization Etc.					**$ 35,000**
Mobilization	LS	$ 35,000.00	1	$ 35,000	
Real Estate Purchase	AC	$ 20,000.00		$ -	
Track-Related Earthwork					**$ -**
Clear & Grub	AC	$ 3,000.00		$ -	
Remove Structures	EA	$ 3,000.00		$ -	
Excavation to Waste (Incl. Haul)	CY	$ 8.50		$ -	
Fill from Excavation	CY	$ 5.00		$ -	
Fill from Borrow	CY	$ 15.00		$ -	
Subballast	CY	$ 28.00		$ -	
Track					**$ 2,530,000**
Demo Crossing	TF	$ 85.00		$ -	
Demo Track	TF	$3		$ -	
Demo Turnout	EA	$1,400		$ -	
Shift Track	TF	$ 28.00		$ -	
Track Reconstruction	TF	$ 50.00	5280	$ 264,000	
Track Rehab	TF	$ 37.00	22733	$ 841,121	
Track Rehab Including Rail	TF	$ 65.00	10163	$ 660,595	
Grade Crossing Signals	EA	$ 120,000.00	4	$ 420,000	
Concrete Grade Crossing	TF	$ 800.00	410	$ 328,000	
Timber Grade Crossing	TF	$ 200.00	80	$ 16,000	
Structures					**$ 272,000**
Bridge	LF	$ 2,000.00	136	$ 272,000	
Irrigation Water Box Siphons	EA	$ 50,000.00	0	$ -	
Drainage					**$ -**
24" RCP Class V	LF	$ 40.00		$ -	
36" RCP Class V	LF	$ 60.00		$ -	
54" RCP Class V	LF	$ 280.00		$ -	
64" RCP Class V	LF	$ 350.00		$ -	
Utilities					**$ -**
Phone Accom	EA	$ 5,000.00		$ -	
Water Accom	EA	$ 25,000.00		$ -	
Gas Accom	EA	$ 10,000.00		$ -	
Sewer Accom	EA	$ 25,000.00		$ -	
UG Power Accom	EA	$ 12,000.00		$ -	
OH Power Accom	EA	$ 8,000.00		$ -	
Contingencies (20%)			20%		**$ 567,000**
Environmental Mitigation			5%		**$ 140,000**
Construction Subtotal					**$ 3,544,000**
Engineering Design (3.5%)			3.5%		**$ 124,000**
Construction Management (3%)			3.0%		**$ 106,000**
Sales Tax			8.8%		**$ 312,000**
TOTAL					**$ 4,086,000**

Notes:

1) subtotals rounded to nearest 1,000s

2) Estimate in 2005 dollars

Segment 4d Rehab includes 50% ties,significant ballast and surface work, crossing and one bridge rehab, and includes rail replacement on the "main track" portion from "Moses Lake" to Parker Horn.

Segment 4d Reconstruction is the siding and industry lead and spurs to 3 customers east of Broadway and includes rail replacement

Grade Crossing Signals are Protection installed on Potato Hill Rd and significant upgrades at Stratford Rd and SR17.

Construction Cost Estimate
North Columbia Basin Railroad Study

Segment 4e -Wheeler to McDonald Rehabilitation

Track Improvements					
ITEM	**UNIT**	**UNIT PRICE**	**QTY.**	**AMOUNT**	**SUBTOTAL**
Mobilization Etc.					**$ 35,000**
Mobilization	LS	$ 35,000.00	1	$ 35,000	
Real Estate Purchase	AC	$ 20,000.00		$ -	
Track-Related Earthwork					**$ -**
Clear & Grub	AC	$ 3,000.00		$ -	
Remove Structures	EA	$ 3,000.00		$ -	
Excavation to Waste (Incl. Haul)	CY	$ 8.50		$ -	
Fill from Excavation	CY	$ 5.00		$ -	
Fill from Borrow	CY	$ 15.00		$ -	
Subballast	CY	$ 28.00		$ -	
Track					**$ 3,979,000**
Demo Crossing	TF	$ 85.00		$ -	
Demo Track	TF	$3		$ -	
Demo Turnout	EA	$1,400		$ -	
Shift Track	TF	$ 28.00		$ -	
Track Reconstruction	TF	$ 50.00	4224	$ 211,200	
Track Rehab	TF	$ 37.00		$ -	
Track Rehab Including Rail	TF	$ 65.00	46200	$ 3,003,000	
Grade Crossing Signals	EA	$ 120,000.00	5	$ 600,000	
Concrete Grade Crossing	TF	$ 800.00	190	$ 152,000	
Timber Grade Crossing	TF	$ 200.00	64	$ 12,800	
Structures					**$ 120,000**
Bridge	LF	$ 2,000.00	60	$ 120,000	
Irrigation Water Box Siphons	EA	$ 50,000.00	0	$ -	
Drainage					**$ -**
24" RCP Class V	LF	$ 40.00		$ -	
36" RCP Class V	LF	$ 60.00		$ -	
54" RCP Class V	LF	$ 280.00		$ -	
64" RCP Class V	LF	$ 350.00		$ -	
Utilities					**$ -**
Phone Accom	EA	$ 5,000.00		$ -	
Water Accom	EA	$ 25,000.00		$ -	
Gas Accom	EA	$ 10,000.00		$ -	
Sewer Accom	EA	$ 25,000.00		$ -	
UG Power Accom	EA	$ 12,000.00		$ -	
OH Power Accom	EA	$ 8,000.00		$ -	
Contingencies (20%)			20%		**$ 827,000**
Environmental Mitigation			5%		**$ 205,000**
Construction Subtotal					**$ 5,166,000**
Engineering Design (3.5%)			3.5%		**$ 181,000**
Construction Management (3%)			3.0%		**$ 155,000**
Sales Tax			8.8%		**$ 455,000**
TOTAL					**$ 5,957,000**

Notes:

1) subtotals rounded to nearest 1,000s

2) Estimate in 2005 dollars

Segment 4e Rehab includes 50% ties,significant ballast and surface work, crossing and bridge rehab, and includes rail replacement on the "main track" portion from Wheeler to McDonald

Segment 4e Reconstruction is the siding and industry leads between Wheeler and McDonald and includes rail replacement

Grade Crossing Signals are Protection and Upgrades installed Rd N, Both I-90 Frontage Roads, SR17 and Rd M.

Construction Cost Estimate
North Columbia Basin Railroad Study

Segment 5

Track Improvements					
ITEM	**UNIT**	**UNIT PRICE**	**QTY.**	**AMOUNT**	**SUBTOTAL**
Mobilization, Etc.					**$ 2,257,000**
Mobilization	LS	$ 35,000.00	1	$ 35,000	
Real Estate Purchase	LS	$ 2,222,200.00	1	$ 2,222,200	
Track-Related Earthwork					**$ 4,589,000**
Clear & Grub	AC	$ 3,000.00	200	$ 598,800	
Remove Structures	EA	$ 3,000.00		$ -	
Excavation to Waste (Incl. Haul)	CY	$ 8.50	64691	$ 549,874	
Fill from Excavation	CY	$ 5.00	268792	$ 1,343,960	
Fill from Borrow	CY	$ 15.00		$ -	
Subballast	CY	$ 28.00	74870	$ 2,096,360	
Track					**$ 8,081,000**
Install 115 LB Ballasted Track	TF	$ 85.00	86940	$ 7,389,900	
Install No. 11 T.O Hand Throw (HT)	EA	$125,000	1	$ 125,000	
Install No. 9 T.O Hand Throw (HT)	EA	$34,000	6	$ 204,000	
Shift Track	TF	$ 28.00		$ -	
Track Removal	TF	$ 11.00		$ -	
Track Rehab	TF	$ 50.00		$ -	
Track Relay & Shoulder Improvements	TF	$ 70.00		$ -	
Grade Crossing Signals	EA	$ 120,000.00	2	$ 240,000	
Concrete Grade Crossing	TF	$ 800.00	152	$ 121,600	
Timber Grade Crossing	TF	$ 140.00		$ -	
Structures					**$ -**
Bridge	LF	$ 5,500.00	0	$ -	
Irrigation Water Box Siphons	EA	$ 50,000.00	0	$ -	
Drainage					**$ 29,000**
24" RCP Class V	LF	$ 40.00	720	$ 28,800	
36" RCP Class V	LF	$ 60.00		$ -	
54" RCP Class V	LF	$ 280.00		$ -	
64" RCP Class V	LF	$ 350.00		$ -	
Utilities					**$ -**
Phone Accom	EA	$ 5,000.00		$ -	
Water Accom	EA	$ 25,000.00		$ -	
Gas Accom	EA	$ 10,000.00		$ -	
Sewer Accom	EA	$ 25,000.00		$ -	
UG Power Accom	EA	$ 12,000.00		$ -	
OH Power Accom	EA	$ 8,000.00		$ -	
Contingencies (30%)			30%		**$ 4,487,000**
Environmental Mitigation			10%		**$ 1,270,000**
Construction Subtotal					**$ 20,713,000**
Engineering Design (7%)			7.0%		**$ 1,450,000**
Construction Management (6%)			6.0%		**$ 1,243,000**
Sales Tax			8.8%		**$ 1,823,000**
TOTAL					**$ 25,229,000**

Notes:

1) subtotals rounded to nearest 1,000s

2) Estimate in 2005 dollars

Construction Cost Estimate
North Columbia Basin Railroad Study

Segment 5b

Track Improvements					
ITEM	**UNIT**	**UNIT PRICE**	**QTY.**	**AMOUNT**	**SUBTOTAL**
Mobilization, Etc.					**$ 4,600,000**
Mobilization	LS	$ 80,000.00	1	$ 80,000	
Real Estate Purchase	LS	$ 4,520,000.00	1	$ 4,520,000	
Track-Related Earthwork					**$ 17,482,000**
Clear & Grub	AC	$ 3,000.00	149	$ 447,000	
Remove Structures	EA	$ 3,000.00		$ -	
Excavation to Waste (Incl. Haul)	CY	$ 8.50	842882	$ 7,164,497	
Fill from Excavation	CY	$ 5.00	1067761	$ 5,338,805	
Fill from Borrow	CY	$ 15.00		$ -	
Subballast	CY	$ 28.00	161832	$ 4,531,296	
Track					**$ 14,949,000**
Install 115 LB Ballasted Track	TF	$ 85.00	161832	$ 13,755,720	
Install No. 11 T.O Hand Throw (HT)	EA	$250,000	1	$ 250,000	
Install No. 9 T.O Hand Throw (HT)	EA	$34,000		$ -	
Shift Track	TF	$ 28.00		$ -	
Track Removal	TF	$ 11.00		$ -	
Track Rehab	TF	$ 50.00		$ -	
Track Relay & Shoulder Improvements	TF	$ 70.00		$ -	
Grade Crossing Signals	EA	$ 150,000.00	4	$ 600,000	
Concrete Grade Crossing	TF	$ 800.00	377	$ 301,600	
Timber Grade Crossing	TF	$ 140.00	296	$ 41,440	
Structures					**$ 3,450,000**
Bridge	LF	$ 5,500.00	600	$ 3,300,000	
Irrigation Water Box Siphons	EA	$ 50,000.00	3	$ 150,000	
Drainage					**$ 186,000**
24" RCP Class V	LF	$ 40.00	4650	$ 186,000	
36" RCP Class V	LF	$ 60.00		$ -	
54" RCP Class V	LF	$ 280.00		$ -	
64" RCP Class V	LF	$ 350.00		$ -	
Utilities					**$ 384,000**
Phone Accom	EA	$ 5,000.00	14	$ 70,000	
Water Accom	EA	$ 25,000.00	2	$ 50,000	
Gas Accom	EA	$ 10,000.00	4	$ 40,000	
Sewer Accom	EA	$ 25,000.00		$ -	
UG Power Accom	EA	$ 12,000.00	8	$ 96,000	
OH Power Accom	EA	$ 8,000.00	16	$ 128,000	
Contingencies (30%)			30%		**$ 12,315,000**
Environmental Mitigation			10%		**$ 3,645,000**
Construction Subtotal					**$ 57,011,000**
Engineering Design (7%)			7.0%		**$ 3,991,000**
Construction Management (6%)			6.0%		**$ 3,421,000**
Sales Tax			8.8%		**$ 5,017,000**
TOTAL					**$ 69,440,000**

Notes:
1) subtotals rounded to nearest 1,000s
2) Estimate in 2005 dollars

Appendix H

Stakeholder Interviews

Northern Columbia Basin Rail Project

Appendix H
Stakeholder Interviews

During the month of August, 2005, the project team interviewed the stakeholders involved in the proposed expansion of the operations on the CBRW. The following stakeholders were interviewed:

Columbia Basin Railroad:	Mr. Brig Temple
BNSF Railway Company:	Mr. Warren Bell
	Mr. Jack Ellstrom
	Mr. John Karl
ASPI Group:	Mr. Kim Foster
Port of Moses Lake:	Mr. Albert Anderson
Moses Lake Chamber of Commerce:	Ms. Karen Wagner
	Mr. Mike Bolander
	Ms. Jacie Daschel
	Mr. Dale Crittenden
Grant County Economic Development Council:	Mr. Terry Brewer
Port of Quincy:	Mr. Pat Boss

In addition, WSDOT staff interviewed representatives from the BNSF and the Port of Quincy during the months of October and November 2005.

All of the stakeholders interviewed recognize that good rail service is paramount to the ability to attract new businesses into the area. This in turn will improve the local economy. The railroads, CBRW and BNSF, promote a more conservative approach to the construction of new track into industrial properties. Both railroads prefer to build after the business is confirmed, while the city, county and industrial developers support a more aggressive approach, recommending building first in order to attract the businesses into the area. Both approaches have merit. **Exhibit G-1** summarizes the Segment priority for each of the stakeholders as identified in the interviews. Summaries of the interviews follow this exhibit.

Exhibit G-1 Stakeholder Priorities

Stakeholder	Segment Priority
CBRW	1 and 4
BNSF	none
ASPI	2 and 5
Port of Moses Lake	1 and 4
Moses Lake Chamber of Commerce	2 and 5
Grant County Development Group	2
Port of Quincy	2 and 4

Columbia Basin Railroad

Contact: Mr. Brig Temple, President CBRW

The Columbia Basin Railroad (CBRW) is operated by the Temple family (full ownership expected by the end of 2005). The railroad handles roughly 8,400 carloads per year between Moses Lake and Connell, Washington. The railroad has a FRA Class 2 Status between Connell and McDonald, which allows for speeds up to 25 mph. The line between McDonald and the Grant County International Airport (GCIA) has a FRA Excepted Status, which limits speeds to 10 mph.

The CBRW has seriously considered abandoning the line between the McDonald siding and the GCIA due to the poor condition of the line and the limited volume of train traffic (63 cars per year). CBRW does believe the current rail line provides connections into prime development property, and therefore, would prefer to have the rail line relocated through the Wheeler Industrial area just west of Wheeler. (This relocation is the same as proposed in Segment 1.) The relocation would allow the CBRW to abandon the downtown track and focus operations on the new industrial tracks. CBRW believes that the track through Moses Lake to the airport should be owned by either the Port of Moses Lake or the State of Washington.

Ultimately, the CBRW would like to see the line connected to the BNSF at either Soap Lake or Port of Quincy north of Moses Lake. While they would like to operate on this new section of rail line, CBRW would not like to own it or allow the BNSF to operate over their other sections of line.

BNSF

Contact: Mr. Warren Bell, Service Design
Mr. Jack Ellstrom, Superintendent Operations
Mr. John Karl, Manager of Business & Economic Development

The BNSF has three major east/west routes through Washington. The Great Northern route is currently operating 24 to 30 trains daily, which is close to the maximum capacity of 30 trains daily. The line handles mostly a mix of intermodal and merchandise trains. The Northern Pacific (NP) line handles empty grain trains and a couple of mix trains each day. The tunnel restrictions on the NP line will not allow for plate F railcars and double stack trains.

The BNSF has looked at directional routes on these lines, but the Northern Pacific line cannot handle stack intermodal trains and it is a longer route. To fix the NP route, the BNSF estimated the cost to be at least $30 million. There are no plans for directional routing at this time.

If the CBRW rail line were connected to the Great Northern line, the BNSF would require additional set out and pick up tracks to handle the traffic over the Great Northern line. The BNSF is not interested in providing any switching to the industries, but if the business was sufficiently large, the BNSF may then consider providing service to the line. The BNSF would only consider using the CBRW lines for traffic currently moving to Pasco via Spokane from Wenatchee. This could amount to one or two trains per week. The BNSF would like to operate their crews over the CBRW, but would expect to control the directional routing.

If the State of Washington rebuilt the old Milwaukee line between Ellensburg and Lind, the BNSF would be interested in operating this line as it would save the BNSF route miles and crew time on the Stampede Pass route.

BNSF *(WSDOT interview)*

Contact: Mr. Ron Jackson

Ron Jackson stated that a main line connection to the Grant County International Airport (GCIA) at Soap Lake would also require the construction of set out tracks so that cars could be dropped off and picked up without blocking the main line. Mr. Jackson said that a connection to the Quincy Intermodal Park would require a move across the BNSF main line, as the park is on the north side of the tracks. Mr. Jackson said that BNSF would consider allowing another operator to make this move across the BNSF main line if a connection to Moses Lake existed. The connection would have to be somewhere beyond the 7000' siding that BNSF needs for improved intermodal service at Quincy.

Mr. Jackson was uncertain of the benefits of such a connection between Quincy and Moses Lake. He said BNSF currently runs a local train between Wenatchee and Quincy each day. Therefore, Moses Lake traffic would go

through both Quincy and Wenatchee, which would add extra transit time. Mr. Jackson said BNSF is always looking for business opportunities, and the presence of a large volume shipper at Moses Lake would cause BNSF to consider the best way to serve them if this became a reality.

ASPI Group

Contact: Mr. Kim Foster, Corporate Counsel

Mr. Foster, counsel for ASPI Group, provided RII with an extensive write up on the benefits and drivers of the Columbia Basin Railroad Project. ASPI Group is a large land holder in the Grant County International Airport area, controlling over 800 acres. Mr. Foster listed the following areas as benefits to the Moses Lake area:

The area has the *lowest electric power rates* in the United States. Lowest power rates are an important factor for heavy manufacturing companies, which stand to realize a 66% savings over the Puget Sound area, an 80% savings over the southeast and a 95% savings over Japan. Large/heavy manufacturing companies will usually require rail transportation as well.

The area has a *large airport facility* at the Grant County International Airport (GCIA). The airport has the largest runway in the western United States. Aerospace manufacturing, maintenance and paint and disassembly are all major industrial prospects for the Moses Lake area. The location of the airport and the length of the runway are positive selling points to Asian long haul cargo flights, which are scheduled to begin using the new A380 planes. This could lead to the potential for a suitable hub in the northwest for a sort center, etc.

The area contains *available and affordable land for large footprint users*. With the absence of large industrial-zoned parcels in the Puget Sound area, large footprint industries are looking south or east for land opportunities. The ASPI properties are already zoned for heavy industry with all industrial infrastructure to the site, permitted and ready to build. Many large footprint users are also rail users.

ASPI supports the option to connect the CBRW to the northern BNSF route at Soap Lake and places this option as a priority. ASPI believes having access to the BNSF in both the south and north will place Moses Lake in a strategic position to move freight from Central Washington. The access will allow for flexibility in rail routing to potential new businesses.

ASPI believes that from a funding point of view, if the downtown bypass (Segment 1) is completed first, there will be little chance of completing the northern connection to the BNSF (Segments 2 & 5). Therefore, if the

northern connection is completed first, there will be strong incentive to complete the bypass second. In addition, ASPI believes the connection to the northern route could hold the key to Homeland Security funding in order to ensure there is a redundancy in rail service through the two northern tunnels in the event of a disaster or terrorist act.

ASPI adamant believes that portions of the $2 million currently allocated should be used to extend the rail one and one half miles to the airport.

Port of Moses Lake

Contact: Mr. Albert Anderson, Industrial Development

The Port of Moses Lake is responsible for development, railroad issues and marketing. The Port controls the free trade zone of 300 acres and is responsible for marketing and developing roughly 7,500 acres. The major area of concern is the railroad from McDonald to the end of the line at the airport. The 20/20 Committee (a group focused on communities, economic development, environmental, and quality of life issues) would like to develop the water front area. However, this is not possible with the existing train operations. The Port will not support any abandonment of the line through Moses Lake until a new line has been constructed. In addition, they indicated that all track should be upgraded to at least Class 1 FRA Status and 286,000 pound capacity.

The Port of Moses Lake works closely with the Port of Quincy. The Port of Moses Lake, however, does not envision an inland port at Moses Lake.

Moses Lake Chamber of Commerce

Contact: Karen Wagner, Manager
Mike Bolander, 20/20 Committee
Jacie Daschel, 20/20 Committee
Dale Crittenden, 20/20 Committee

The Moses Lake Chamber of Commerce believes the County needs good rail service and that the current rail operation through Moses Lake must be improved. They are in favor of developing a tourist train operation to the airport. If this option is not available they would support the abandonment of the line.

The Chamber believes that the northern extension (Segment 2 and 5) are needed in order to help market the County's 4,000 acres of land and improve the movement of produce east and west. Direct connection to Quincy will be important in the future.

Grant County Economic Development Council

Contact: Terry Brewer, Executive Director

The Grant County Economic Development Council is currently working with several large manufacturing and plastics companies to develop business in the Wheeler area. The council has seen an increase in the number of inquires for industrial space with rail access. Other areas competing with the Moses Lake area are Warden and the Port of Quincy (300 acres).

The council believes that the extension to the airport is required in order to enhance the development of the property in the region. The council also believes that the railroad should be relocated through the Wheeler Industrial area, but that it does not need to be extended to the BNSF Great Northern line. Specific projects currently being evaluated:

Ethanol Plant:	Volumes to be determined	
Manufacturing Company:	4 to 6 rail cars per week	208 to 312 cars/year
Plastics Company:	3 to 5 rail cars per week:	156 to 260 cars/year

Both companies are looking to locate in the Wheeler area.

Port of Quincy

Contact: Pat Boss, Consultant to Port

The Port of Quincy considers Quincy a strategic location for traffic and, as such, is developing a major intermodal facility. Northwest Containers is operating at this facility. The Port would like to ship both east and westbound. However, they are having difficulty getting the BNSF's attention regarding service commitment from the BNSF. The operation will only work if the BNSF stops at a 5,000' siding at Quincy. According to the BNSF, between 250 and 500 units must move eastbound per week and 30 units westbound per week before the BNSF will consider stopping. The Port of Quincy would like to see the traffic flow from Moses Lake to Quincy as long as the traffic is not intermodal.

The Port of Quincy supports the development of the northern extension from Moses Lake to the BNSF main line.

Port of Quincy *(WSDOT interview)*

Contact: Lawrence Julius, Consultant to Port
Patric F. Connelly, Port Commissioner

Are you aware of the Moses Lake project in detail – phases, routes, operational plans, etc? Yes. A meeting was recently held between the Port and Quincy and Moses Lake in which all of the details of the proposed project were discussed.

What is your opinion on each portion of the Moses Lake project and why? The first four segments seem to make sense and the Port of Quincy supports them. However, the connection to the mainline (segment 5) does not seem justifiable because of the limited traffic base and the cost. It will also be a challenge getting full cooperation from the BNSF to implement segment 5.

Tell me about the Port of Quincy, its plans and goals. The main goal of the Port is to help diversify Quincy's economy. The local economy is currently an agricultural-based economy; however, the Port would like to change this to some extent. The Port would like its new intermodal facility to become a major distribution center for the region. The Port hopes that, with projected growth at the ports of Seattle and Tacoma, an inland port facility--with eastbound and westbound freight transferred between trucks and trains for local, regional and national distribution--will become very popular. Thus far, the Port has been able to secure nearly $10 million in loans and grants for their intermodal facility. There is also a proposal for a new $20 million cold storage facility at the Port, which will have its own dedicated spur track.

How are things going for the Port of Quincy so far in general – operations, goals, business, etc? The Port is a little dejected, as they are not shipping anything out of Quincy at this time. Some of the problems they've experienced so far have to do with getting dedicated trains from the BNSF for the intermodal facility. Other challenges have to do with the uncertainty some shippers have about using the Quincy facility. The Port would like to work more closely with the Ports of Seattle and Tacoma, but the reaction of these ports to the inland port concept has been mixed.

What is the Port of Quincy's goal for its new intermodal facility? The goal of the intermodal facility is to help diversify the local economy. The project is expected to result in as many as 50 additional jobs at the park itself and 57 more in the local community, producing more than $2 million in annual personal income in the area (from the Port's business plan).

How has the Port of Quincy been working with the BNSF? Sometimes the working relationship is good, sometimes it isn't. Key issues that have to be addressed include rates, operations, and communication within the BNSF.

What is the BNSF requiring of the Port of Quincy for movement of traffic, both operational requirements and traffic volumes? The only requirement that the BNSF has is that there be the extension of the siding track across the irrigation canal on the east side of the intermodal facility. An additional 3,500 feet will allow BNSF to leave the single-track mainline with full unit trains. Extending the siding over the canal may require re-building the entire bridge, as it is a major choke point on the canal. As far as volumes

of traffic, BNSF has given rates for 30 and 60 car unit trains from the Port. If there are less than 30 cars, then the rate for 30 unit trains still applies.

How can the Port of Quincy and the Port of Moses Lake work together? The Ports should focus on their chief assets, and jointly market the assets of the two facilities to potential tenants. Moses Lake has its airport, and Quincy has its intermodal facility. Some type of transportation connection between the two could help; however, a roadway may make more sense than a rail line.

Why has no traffic moved so far from the Port of Quincy intermodal facility? It seems that no one shipper wants to be the first to make a commitment to use the facility, though there is growing interest. They are right at the point of "getting over the hump" and starting to make the intermodal service work. There is also an issue of getting train equipment from the BNSF, including locomotives.

Who is presently running the intermodal facility? NW Container Services is currently operating the intermodal facility.

Appendix I

Existing and Potential Rail Customers Interviewed

Northern Columbia Basin Rail Project

Appendix I
Existing and Potential Rail Customer Interviews

During the months of August and December, 2005, the project team interviewed companies in the Moses Lake area currently shipping products by rail. A list of potential interview candidates was obtained from the CBRW. RII chose to interview candidates based on the number of employees, current or potential large rail needs, and company location (Moses Lake and GCI Airport region). The objective of the interviews was to determine a) the CBRW shippers' current rail service and their level of satisfaction with this service, b) determine their planned rail service needs in the future, and c) what affects, if any, the new proposed changes to the rail structure in and around the Moses Lake region will have on their company and their transportation options.

Not all companies contacted chose to provide RII with an interview or were available for an interview during the allotted time frame for this study.

Advance Silicon Materials, LLC

Date of Interview: August 2005

1. **Company name and address.**
   Advance Silicon Materials LLC
   5163 Randolph Road
   Moses Lake, WA 98837

2. **Contact information.**
   Clint Peters
   Distribution/Traffic Manager
   (509) 762-8904

3. **Primary product(s) manufactured or processed at this location.**
   Shipping and receiving location/warehouse to support the facility/plant at 3322 Road N N.E. in Wheeler Industrial Zone. Inbound rail product is metallurgical grade silica sand shipped in bulk bags in boxcars. Product received here and shuttled by truck to plant. Outbound product is polysilicon for computer chips.

4. **Estimated annual volume of output.**
   Most outbound is intermodal export via Port of Seattle to Asia. Fifteen percent is domestic by truck. Inbound side: 1.5 carloads per month.

5. **How long company at this location? Why located in Grant County, WA?**
   Plant started production in 1984. ASM sold to REC (Renewable Energy Corp.) in 2002. Locate here due to low cost electrical power.

6. **Number of employees at location, full and part-time.**
   Three at this site and approximately 250 at plant site all full-time.

7. **Outbound transportation volume/spend by mode.**
   a. Rail carload: 0
   b. Rail intermodal/steamship containers: 85% but trucked from Moses Lake to the Ports of Seattle or Tacoma.
   c. Truckload (for-hire): 3% to domestic locations.
   d. LTL: 12% most domestic is LTL.

8. **Outbound destinations and estimated annual volumes to each destination.**
   Twelve steamship containers per month. Routed by ASM.

9. **Inbound commodities (raw materials).**
   Silica sand in bags. From Parkersburg, WV. 60 ft boxcars, 180,000 lbs. per boxcars. Rail dock on west side of building at the GCI Airport, but no warehouse at the plant.

Use warehouse at the Airport. Climate-controlled warehouse. Belongs to Port and leased to ASM. LTL truck daily from warehouse to plant. Bring finished goods from plant to warehouse and then warehouse ships the outbound.

10. **Inbound transportation volume/spend by mode (if they control or pay the freight).**
    ASM controls inbound freight. Value of cargo is $1.00 per pound.

11. **Inbound origins and estimated annual volumes from each origin.**
    Parkersburg, WV on CSXT.

12. **Any problems or issues with any of current transportation modes or suppliers on either inbound or the outbound side (i.e. quality of rail-service, freight car supply, rates, fuel surcharge, access to truck capacity, loss & damage, etc.)?**
    Inbound quality is very good, especially since new CSXT T-Boxes (60 ft boxcars). Great transit times from WV. "Real good luck".

    No problems with drayage. Zip Trucking does great job on moving steamship containers. (Zip is local trucker with larger terminal located in the Moses Lake Industrial Park off Wheeler Road.)

    Need to pick up containers and move to Ports same day. Tight transit times on outbound.

13. **Any plans to expand in Grant County? Any transport-related issues here?**
    Yes subject to PUD (cheap electric power).

14. **Any plans to expand in other North American locations that you are aware of?**
    No.

15. **Any plans to downsize or move at current location? If so why?**
    No.

16. **Any issues or problems with current energy supplies (electricity and natural gas/price or quantity)?**
    Needs continued supply of cheap electric power.

17. **Any labor or workforce issues (quality or quantity)?**
    None.

    Loss of rail service at the GCI Airport would require investments at the plant to build a new warehouse and loss of sunken investments (rail dock) at GCI Airport facility. Truck from Parkersburg, WV to ML is definitely NOT cost effective. Either inbound

moves by rail or it does not move. Note that plant on N Road does NOT currently have a rail siding.

Basic American Foods

Date of Interview: August 2005

1. **Company name, complete address.**
   Basic American Foods
   538 Potato Frontage Road
   Moses Lake, WA 98837-8500
   Company is privately held (family owned).
   (*Note this facility is located at the Marshall siding on CBRW*.)

2. **Contact name, position, phone number (try business card for this info).**
   John G. Nelson
   Operations Manager
   jnelson@baf.com
   (509) 766-3246

3. **Primary product(s) manufactured or processed at this location.**
   Dehydrated potatoes for instant mashed and other ingredients, for institutional food service industry such as Sysco Foods. None for retail trade (grocery). Outbound both in bulk and finished product in boxes and other food-service packages.

4. **Estimated annual volume of output.**
   Moses Lake Plant: in 70 million lbs. range.

5. **How long company at this location? Why located in Grant County, WA?**
   This location was built in 1965. Added beans in past but not currently in service. Moved bean production to Plover, WI facility. Potatoes are grown here and cheap electric power.

6. **Number of employees at location, full and part-time.**
   100 full-time. Don't use part-timers.

7. **Outbound transportation volume/spend by mode.**
   All transportation rates negotiated at Walnut Creek, CA corporate traffic office. They also select actual carriers. They pay the freight also export shipments.
   a. Rail carload: into southeast Idaho (Blackfoot and Rexburg), food-grade bulk railcars, supplied by UPRR.
   b. Rail intermodal: no domestic intermodal.
   c. Truckload (for-hire): packaged products to Idaho Falls, ID DC. Rail is not an option. Truck capacity is always an issue out here. Plenty of trailers but not enough tractors/power. Offer outbound from Idaho Falls so this location is lucrative for outbound truckers. Drivers can pick up loads 24 hours per day7 days per week; run 24 hrs per day 7 days per week. Make facility "trucker-

friendly". Need food-grade dry vans or clean reefers (units off). (They feed inbound trucks to Idaho Falls so that facility has enough outbound capacity.)

d. LTL: 0
e. International steamship containers out of Port of Seattle then to Southeast Asia. All trucked to Seattle. East Coast exports truck to Seattle then rail to East Coast for export to Europe. Export everywhere around the World.

   Know about Port of Quincy facility but not using at this time. Used intermodal terminal at Spokane, WA terminal (BN) back in the 1970's but truck deregulation in 1980 produced better truck rates.

8. Outbound destinations and estimated annual volumes to each destination.

Idaho: 3 cars per week.

9. Inbound commodities (raw materials).

Potatoes from all local fresh packers.

10. Inbound transportation volume/spend by mode (if they control or pay the freight).

Trucked in by packers and common carrier used by BAF.

11. Inbound origins and estimated annual volumes from each origin.

(information not provided)

12. Any problems or issues with any of current transportation modes or suppliers on either inbound or the outbound side (i.e. quality of rail-service, freight car supply, rates, fuel surcharge, access to truck capacity, loss & damage, etc.)?

Rail: takes 6-25 days one way to Idaho. Lack of reliability. Better service going when they are full rather than empties. High variability of deliveries is an issue. "Should be" 8-9 days each direction. Truck is not really an option due to high cost and poor availability of food-grade bulk trailers. Rail equipment is air-slide covered hoppers food-grade. Rates are negotiated at corporate HQ in Walnut Creek, CA. Demurrage bills come here. Issue here is reduction in free-time. Would be nice to have some give and take. UPRR lost a railcar 3-4 months ago and wound up in Nebraska. Took a total of 45 days. Happens 3-4 times per year. Loss and damage is not an issue as long as all cars are food-grade. They also make minor repairs on rail cars at this facility when needed to improve turnaround times.

Major problem seems to be at Pasco interchange between CBRW and UP. Current pool consists of 14 cars. Also use UP from facility in Plover, WI to Southeast Idaho.

Get switched 3-4 times per week, during the week, around 3pm.

Track can hold 4 covered cars. Double track siding. Plus corn oil unloading facility. McDonald Siding.

13. Any plans to expand in Grant County? Any transport-related issues here?

Like to get back in the bean business but would not use rail for this business. Inbound local and outbound would be packaged goods shipped by truck. Could source pinto beans (raw material) in North Dakota and Colorado, and ship bulk by rail to Moses Lake and then dehydrate and package here using existing facility. Plover sources its beans from Red River Valley. Volume of bean production depends on Mexican food business. Seems to be more of this in east than in west so Plover is better location for now.

14. Any plans to expand in other North American locations that you are aware of?

Plover, WI, Blackfoot, ID, and Rexburg, ID, Idaho Falls DC, new plant in Maine just purchased from another company.

15. Any plans to downsize or move at current location? If so why?

No, however loss of rail service would probably shut down plant, then move production to other facilities.

16. Any issues or problems with current energy supplies (electricity and natural gas/price or quantity)?

Advantage to this location is low-cost of electricity. High cost of natural gas Is an issue. Dehydrating takes a lot of power and energy. Very energy-intensive.

17. Any labor or workforce issues (quality or quantity)?

None.

Used to have an 80,000 sq ft warehouse at the GCI Airport until 3-4 years ago for use a DC. Now ship outbound direct from the plant.

Brotherton Seed Co, Inc.

Date of Interview: August 2005

1. **Company name, complete address.**
   Brotherton Seed Co, Inc.
   P.O. Box 1136
   Moses Lake, WA 98837
   (*Note that physical location is on Moses Lake Branch just south of the West Broadway grade crossing.*)

2. **Contact name, position, phone number (try business card for this info).**
   Jerome Brotherton
   Managing Director
   Jerome@brothertonseed.com
   (509) 765-1816

3. **Primary product(s) manufactured or processed at this location.**
   Pea and bean seed.

4. **Estimated annual volume of output.**
   7.6 million lbs.

5. **How long company at this location? Why located in Grant County, WA?**
   Since 1955. That's where the raw material is located.

6. **Number of employees at location, full and part-time.**
   13 fulltime, 8 part-time. Hires 30-35 contract laborers.

7. **Outbound transportation volume/spend by mode.**
   a. Rail carload: 1.9 million lbs. (90,000lbs. per car, 60 ft boxcars).
   b. Rail intermodal: 3.5 million lbs. (45,000lbs per unit)
      About half of this is export containers. Trucked to Seattle then rail to Port of NY/NJ, then to Europe. Half to NY and eastern Canada. Use Tradewinds (FF) for foreign shipments. C.H. Robinson is IMC for domestic shipments.
   c. Truckload (for-hire): 2.5 million lbs. (45,000 lbs per load).
   d. LTL: 45, 000 lbs.

8. **Outbound destinations and estimated annual volumes to each destination.**
   PNW: 2.2 million lbs.
   Midwest: 2.1 million lbs.

   Northeast US and Eastern Canada: 1.6 million lbs.
   Foreign: 1.7 million lbs.

Brotherton pays freight to Europe, 25% outbound domestic volume prepaid. Domestic customers are getting larger and converting to rail quantities. They usually ask for comparison between rail and truck rates. Customers usually willing to take rail if they have facilities and rail is cheaper than truck. Most customers compare transport costs and specify modes.

9. **Inbound commodities (raw materials).**
   8.3 million lbs., by truck within about a 100-mile radius.

10. **Inbound transportation volume/spend by mode (if they control or pay the freight).**
    N/A

11. **Inbound origins and estimated annual volumes from each origin.**
    All from Washington State.

12. **Any problems or issues with any of current transportation modes or suppliers on either inbound or the outbound side (i.e. quality of rail-service, freight car supply, rates, fuel surcharge, access to truck capacity, loss & damage, etc.)?**
    Problems with car supply (60ft DF boxcars: BNSF). Transit times are slow and loads move better than empties. Allow 2 weeks transit to the east coast and usually hit that mark. Concerned about next year's rates and fuel surcharges. "Question of price".

    Truck is actually easier to use but will stay with rail if price is competitive. Slow transit is not an issue but price is.

    Intermodal goes well both domestic and intermodal. Make the vessel 90% of time on exports to Europe.

    Truck supply has been adequate…February and March are peak periods, use truck brokers rather than a single carrier.

13. **Any plans to expand in Grant County? Any transport-related issues here?**
    Did not expand due to concerns about future of rail service at M.L. location.

14. **Any plans to expand in other North American locations that you are aware of?**
    Quincy, WA, Tekoa, WA. Would like to expand in Moses Lake and close Quincy facility but need guarantee of rail service and space at M.L. to expand. No rail service at the Quincy location. Was going to purchase building next door last year and expand but not sure about continuing rail service at this location.

15. **Any plans to downsize or move at current location? If so why?**

Loss of rail service would greatly curtail Moses Lake operations, possibly close.

16. Any issues or problems with current energy supplies (electricity and natural gas/price or quantity)?

No.

17. Any labor or workforce issues (quality or quantity)?

No.

D&L Foundry and Supply, Inc.

Date of Interview: August 2005

1. **Company name, complete address.**
   D&L Foundry and Supply, Inc.
   12970 Road 3 N.E. (Wheeler Road)
   P.O. Box 1319
   Moses Lake, WA 98837

2. **Contact name, position, phone number (try business card for this info).**
   Joseph W. Wiberg
   Vice President/General Manager
   (509) 765-7952

3. **Primary product(s) manufactured or processed at this location.**
   Grey and ductile iron castings.

4. **Estimated annual volume of output.**
   25,000 tons.

5. **How long company at this location? Why located in Grant County, WA?**
   Producing castings for 14 years. Cheap electric power was driving as well as cost of land at the time. Decent labor pool.

6. **Number of employees at location, full and part-time.**
   140 fulltime, 0 part-time.

7. **Outbound transportation volume/spend by mode.**
   a. Rail carload: 10 railcars of scrap over past 2 years.
   b. Rail intermodal: 0
   c. Truckload (for-hire/private): 50% done on private fleet and 50% for-hire.
      Private fleet and contract haulers are all flatbeds.
      Private fleet consists of 7 drivers/9 tractors/22 trailers.
   d. LTL: 1%.

8. **Outbound destinations and estimated annual volumes to each destination.**
   50% to California, 40% to Idaho and Utah, 10% to Washington and Oregon.

9. **Inbound commodities (raw materials).**
   Cast iron scrap. Melting 2,000 tons per month. 50% comes in by rail.
   90 tons per car=10 to 16 cars per month.

10. **Inbound transportation volume/spend by mode (if they control or pay the freight).**
    50% rail, 50% truck on inbound. Try to use private fleet for backhauls. Many suppliers also have their own trucks to deliver raw materials. Backhauls from Las Vegas, California, Oregon, Idaho with D&L private fleet.

11. **Inbound origins and estimated annual volumes from each origin.**
    50% of inbound rail comes from Canada via CN and CP. Balance from Montana and Oregon. Some Colorado and Utah origins. Routed via BNSF to Pasco interchange.

12. **Any problems or issues with any of current transportation modes or suppliers on either inbound or the outbound side (i.e. quality of rail-service, freight car supply, rates, fuel surcharge, access to truck capacity, loss & damage, etc.)?**
    Fuel costs for both truck and rail. Rail service is unpredictable. Reliable on CBRW but very difficult to ship across country. Much easier to ship by trucks. CBRW gets good marks for service and reliability. Hard time increasing rail usage. "Too unpredictable". Actually uses BNSF. Suppliers have problems with car supplies (gondolas). Would like to use more rail but equipment issues force trucking or delays to shipping.
    Some issues with garbage in railcar mixed with scrap loads.

    No issues with bunching of railcars or demurrage. Problems with railcar tracking and tracing when on the Class One carrier.

    Likes rail for shipping inbound scrap from remote or difficult to serve locations. Major impact if rail was not available. Have looked at shipping rail to California but not feasible at this time. Longer term potential "under right circumstances could be a winner but not today". Outbound rail would be feasible if plant had direct rail service (i.e. siding).

13. **Any plans to expand in Grant County? Any transport-related issues here?**
    Done quite a bit of expansion already, but would like to have a spur direct into the plant if rail line is extended west along Wheeler Road.

    Own 50 acres at this location but only using 14 acres. Could be as many as 3 customers coming off a new spur with line extension.

14. **Any plans to expand in other North American locations that you are aware of?**
    No

15. **Any plans to downsize or move at current location? If so why?**
    No

16. Any issues or problems with current energy supplies (electricity and natural gas/price or quantity)?

Expansion plans dependent on cost of electricity in Grant County (PUD).

17. Any labor or workforce issues (quality or quantity)?

Not really just concerns about drivers for private fleet.

Note that plant does not currently have a rail siding. Inbound railcars arrive at the team track at west end of Wheeler Industrial Spur. Take excavator with magnet over to team track, unload scrap from railcars into dump truck and then bring over to plant. Doing own transloading next to other scrap dealer at the end of track location. Would consider additional raw materials by rail with spur if rail service was adequate. Also change raw material purchasing decision. Convert raw materials from bags, etc to bulk rail shipments. Estimate a 10-15% increase in inbound rail volume if had direct spur into plant, with potential for more, as well as outbound potential.

Ferrellgas

Date of Interview: August 2005

1. **Company name, complete address.**
   Ferrellgas
   1325 West Broadway
   Moses Lake, WA 98837
   (*Note this location is right at south end of West Broadway grade crossing on the Moses Lake Branch.*)

2. **Contact name, position, phone number (try business card for this info).**
   Aaron B. Gimmeson
   Operations Manager
   (509) 765-5211

3. **Primary product(s) manufactured or processed at this location.**
   Propane Gas Distributor
   Located at west end of main business district.

4. **Estimated annual volume of output.**
   30 tank cars of propane per year. 30,000 gallons per tank car. 3 trucks to equal one railcar.

5. **How long company at this location? Why located in Grant County, WA?**
   Propane distributor at this location for 50-plus years. Ferrellgas has been here for 25 years. Estimated cost to relocate terminal to airport: $300,000 minimum.

6. **Number of employees at location, full and part-time.**
   3 fulltime and 1 part-time.

7. **Outbound transportation volume/spend by mode.**
   a. Rail carload
   b. Rail intermodal
   c. Truckload (for-hire or private)
   d. LTL
      Outbound is all customer pick-up in own trucks.

8. **Outbound destinations and estimated annual volumes to each destination.**
   Local propane distribution in Grant, Douglas, Adams Counties.

9. **Inbound commodities (raw materials).**
   Propane gas.

10. **Inbound transportation volume/spend by mode (if they control or pay the freight).**
    Inbound freight is included in purchased price so Ferrellgas pays freight but supplier negotiates the actual freight rates.

11. **Inbound origins and estimated annual volumes from each origin.**
    Top 3 origins are all located in Alberta, CAN.

12. **Any problems or issues with any of current transportation modes or suppliers on either inbound or the outbound side (i.e. quality of rail-service, freight car supply, rates, fuel surcharge, access to truck capacity, loss & damage, etc.)?**

    Always receive arrival notices from railroad but cars usually 1-2 days later than the notice (OSAD). Not a big deal since they carry inventory cushion. Highest demand for propane is in the winter when weather is the worst. Using truck transport in winter is problematic due to road conditions. Loss of rail service would increase price of gas sold by $.10-.15 per gallon, or equivalent of $4,500 per rail car (x30 carloads per year). Add 100 additional semi-trucks per year to this location without rail service. Both congestion and safety issues here.

    Summer: get cars every 2 or 3 weeks. Winter: every 1-2 weeks. Peak season September 1 – April 30 (aka the heating season and major agriculture uses such heaters for fruit trees and crop dryers).

    UN1075, hazard class flammable gas.

13. **Any plans to expand in Grant County? Any transport-related issues here?**
    Market share is growing continually. 10% per year. Primary competitor is Northern Energy, also located in Moses Lake and rail-served at GCI Airport. Other competitors located in Quincy and Wenatchee and probably rail-served.

14. **Any plans to expand in other North American locations that you are aware of?**
    No.

15. **Any plans to downsize or move at current location? If so why?**
    Loss of rail service would be serious problem. Could result in shutdown of this Facility.

16. **Any issues or problems with current energy supplies (electricity and natural gas/price or quantity)?**
    No problems.

17. **Any labor or workforce issues (quality or quantity)?**
    No.

Genie Industries, Inc.

Date of Interview: August 2005

1. **Company name, complete address.**
   Genie Industries, Inc.
   8987 Graham Road NE, Building 5820
   Moses Lake, WA 98837
   (Division of Terex)

2. **Contact name, position, phone number (try business card for this info).**
   George L. Santiago
   Plant Manager
   SantiG@genieind.com
   (509) 762-3221

3. **Primary product(s) manufactured or processed at this location.**
   Aerial lifts for construction and rental industries.

4. **Estimated annual volume of output.**
   4,200 units.

5. **How long company at this location? Why located in Grant County, WA?**
   5.5. years.

6. **Number of employees at location, full and part-time.**
   380 employees.

7. **Outbound transportation volume/spend by mode.**
   a. Rail carload: 0.
   b. Rail intermodal: 0
   c. Truckload (for-hire): 2,100 trucks.
   d. LTL: 0

8. **Outbound destinations and estimated annual volumes to each destination.**
   30% volume west, 8% of that, 70% goes east via I90.

9. **Inbound commodities (raw materials).**
   Steel engines electrical components, hydraulics, fiberglass covers, and counterweights.

10. **Inbound transportation volume/spend by mode (if they control or pay the freight).**
    Freight collect.

11. Inbound origins and estimated annual volumes from each origin.
8 trucks per day from Everett, WA, one each from Pasco and Spokane. Freight from the east delivered by Yellow Freight (inbound pool).

12. Any problems or issues with any of current transportation modes or suppliers on either inbound or the outbound side (i.e. quality of rail-service, freight car supply, rates, fuel surcharge, access to truck capacity, loss & damage, etc.)?
Occasional damage. Sometimes trucks tight during peak shipping periods like end of month.

13. Any plans to expand in Grant County? Any transport-related issues here?
Huge opportunity to expand here since Redmond, WA plant operating at capacity.

Added 200 people here in last 18 months.

14. Any plans to expand in other North American locations that you are aware of?
Yes at other Terex locations.

15. Any plans to downsize or move at current location? If so why?
No

16. Any issues or problems with current energy supplies (electricity and natural gas/price or quantity)?
Loves cheap electricity in Moses Lake.

17. Any labor or workforce issues (quality or quantity)?
Just added 200 new jobs in last months.

Why no rail today?? Global for Tim Meyer at corporate traffic in Redmond office. Expanding supply chain to including product source from Mexico, probably Brownsville area. How to get product to Moses Lake? Use intermodal. Concerns about damage on rail flatcars for outbound.

All shipped on flatbeds today. 17-20 units per day outbound. Would seriously consider rail if siding was located in the plant. Off and on truck capacity is an issue especially at the end of the month. Product does not get tarped. Just shipped in the open on flatbed trailers, tied down with chains and block basked to the floor.

Elmer Hansen Produce

Date of Interview: August 2005

1. **Company name, complete address.**
   Elmer Hansen Produce
   471 S. Milwaukee
   Moses Lake, WA 98837

2. **Contact name, position, phone number (try business card for this info).**
   Guy Hansen
   (509) 765-8895
   Elmer Hansen Produce has been located in Moses Lake since 1953. The company only ships four railcars of onions per year to New York. The company can't use regular intermodal because shipments need to be protected

3. **Company Description.**
   Receives inbound onions by truck and ships outbound onions by truck and rail.

4. **Transportation Issues.**
   Traffic moves by truck. Only four of their customers have rail access. To ship rail, Hansen requires reefers with running units.

   Their customers want intermodal, but can't find intermodal refrigerated units, so therefore Hanson uses truck brokers exclusively. They experience some seasonal shortages in the fall.

Moses Lake Iron & Steel

Date of Interview: August 2005

1. **Company name, complete address.**
   Moses Lake Iron & Steel
   229 Commerce Street
   Moses Lake, WA 98837
   (Part of Equipment & Salvage Sales – other location at Maiers Industrial Park, Wheeler Road & Road M2 N.E.)

2. **Contact name, position, phone number (try business card for this info).**
   Glenn Dart
   Operations Manager
   (509) 765-6342

3. **Primary product(s) manufactured or processed at this location.**
   Scrap metal and non-ferrous metals (salvage).

4. **Estimated annual volume of output.**
   Ship about 100 cars per year, 70-100 tons per car (1.5-2 cars/week).

5. **How long company at this location? Why located in Grant County, WA?**
   Since 1955.

6. **Number of employees at location, full and part-time.**
   (information not provided)

7. **Outbound transportation volume/spend by mode.**
   a. Rail carload: approx. 100 cars per year (50% of total volume/100% of scrap).
   b. Rail intermodal: 0
   c. Truckload (for-hire): 50% of total volume but only non-ferrous metals, which tend to be smaller shipment weights and higher value than scrap. Use Oak Harbor Freight Lines. Average loads of 25,000lbs. (12-13 tons).
   d. LTL: 0

8. **Outbound destinations and estimated annual volumes to each destination.**
   About 60% to Tacoma, WA routed by shipper, with 40% to other destinations routed by brokers who buy scrap. Transit times 1-2 days to Tacoma from Moses Lake. Trucks also to Tacoma/Seattle area.

9. **Inbound commodities (raw materials).**
   Scrap and salvage from local sources.

10. **Inbound transportation volume/spend by mode (if they control or pay the freight).**
    (information not provided)

11. **Inbound origins and estimated annual volumes from each origin.**
    (information not provided)

12. **Any problems or issues with any of current transportation modes or suppliers on either inbound or the outbound side (i.e. quality of rail-service, freight car supply, rates, fuel surcharge, access to truck capacity, loss & damage, etc.)?**
    Load gondolas exclusively. Car supply slow. Need to order cars 6-7 days in advance of loading. BNSF supplies cars. Hold one car on siding so watch demurrage very closely. Switched about twice per week.

13. **Any plans to expand in Grant County? Any transport-related issues here?**
    Stay same.

14. **Any plans to expand in other North American locations that you are aware of?**
    (information not provided)

15. **Any plans to downsize or move at current location? If so why?**
    (information not provided)

16. **Any issues or problems with current energy supplies (electricity and natural gas/price or quantity)?**
    (information not provided)

17. **Any labor or workforce issues (quality or quantity)?**
    (information not provided)

    Corporate offices located in Ephrata, WA. Other location in Moses Lake at Maiers Industrial Park is also rail-served. Located on CBRW team track at extreme west end of Wheeler Industrial Spur, ½ mile north of Wheeler Road.

J.R. Simplot Company

Date of Interview: August 2005

1. **Company name, complete address.**
   J.R. Simplot Company
   14124 Wheeler Rd. NE
   Moses Lake, WA 98837

2. **Contact name, position, phone number (try business card for this info).**
   Steve Hennig
   Unite Director
   Moses Lake Factory
   Steve.hennig@simplot.com
   (509) 765-3443

3. **Primary product(s) manufactured or processed at this location.**
   Frozen and dehydrated potato products. Finished product is warehoused at Americold Logistics warehouse directly north across tracks from plant. Other area plants in Othello and Quincy, WA. Most product is frozen French fries for the fast food industry (McDonalds and Wendy's).

4. **Estimated annual volume of output.**
   350-375 MM lbs.

5. **How long company at this location? Why located in Grant County, WA?**
   40 years. Originally Pronto Foods, then plant owned by Carnation and Nestle before finally Simplot.

6. **Number of employees at location, full and part-time.**
   400 including field group (note, one of largest employers in Moses Lake).

7. **Outbound transportation volume/spend by mode.**
   a. Rail carload: 125 MM lbs. (reefers and boxcars).
   b. Rail intermodal: less than 25 MM lbs.
   c. Truckload (for-hire): 125 MM lbs.
   d. LTL: less than 10 MM lbs.

8. **Outbound destinations and estimated annual volumes to each destination.**
   65% of plant output is shipped overseas. Trucked to Ports from Moses Lake. Destinations by railcar include Texas, Florida and Georgia. Most outbound moves in mechanical refrigerated cars supplied by BNSF, and loaded at Americold warehouse just north of plant. Also ship dry potato granules in packages via boxcar to 4 distribution centers, average of one car per week.

9. **Inbound commodities (raw materials).**
   Locally grown potatoes are trucked in. Inbound raw materials include oil from Cargill, corrugated, chemicals and other ingredients. Est. 2-3 tank cars of oil per week, rest is via truck. Corrugated from Weyerhaeuser plant on Wheeler Road.

10. **Inbound transportation volume/spend by mode (if they control or pay the freight).**
    (information not provided)

11. **Inbound origins and estimated annual volumes from each origin.**
    Plant in Othello also ships finished product to Americold Logistics for storage and shipping.

12. **Any problems or issues with any of current transportation modes or suppliers on either inbound or the outbound side (i.e. quality of rail-service, freight car supply, rates, fuel surcharge, access to truck capacity, loss & damage, etc.)?**
    Have some damage with boxcar shipments of granules, containers get damaged. Concern about growing lack of boxcars without bulkheads. Dunnage and airbags just not as effective in controlling transit damage.

13. **Any plans to expand in Grant County? Any transport-related issues here?**
    None.

14. **Any plans to expand in other North American locations that you are aware of?**
    Says industry is not growing probably due to health concerns about French fries. Not aware of any expansion plans.

15. **Any plans to downsize or move at current location? If so why?**
    Not aware of any.

16. **Any issues or problems with current energy supplies (electricity and natural gas/price or quantity)?**
    Natural gas costs increasing same as nation. Simplot was urged by Grant PUD to convert boilers from electric to gas in 1995 to help "conserve" electric power for additional economic development.

17. **Any labor or workforce issues (quality or quantity)?**
    "Always a challenge."

    Simplot ships finished product across a private railroad crossing to Americold Logistics warehouse on north side of plant. Crossing is located at the west end of Simplot's rail siding, about middle of north side of plant. Crossing is covered with canopy. Product is moved on wheeled cars pulled by a small tractor or 'tug', similar

to airport baggage handling vehicles. Mr. Hennig would be 'concerned' if volume on rail line between two buildings increased. Right now CBRW rail volume is one train per day, 5 days per week, for switching of customers on Wheeler Spur west of Simplot plant. According to Hennig Simplot has looked at feasibility of installing automated conveyor system in lieu of tug and carts, and says estimated cost of such system is $1.5 – 2million. Plant currently operates 24-7, 280-310 days per year, and theoretically moves finished product almost all the time.

Weyerhaeuser

Date of Interview: August 2005

1. **Company name, complete address.**
   Weyerhaeuser
   (Moses Lake Corrugated Plant)
   13594 Wheeler Road N.E.
   P.O. Box 1369
   Moses Lake, WA 98837

2. **Contact name, position, phone number (try business card for this info).**
   Lonnie Stussy
   Production Planner
   Lonnie.stussy@weyerhaeuser.com
   (509) 764-5551

3. **Primary product(s) manufactured or processed at this location.**
   Corrugated boxes (primarily for food packaging).

4. **Estimated annual volume of output.**
   800 million square feet.

5. **How long company at this location? Why located in Grant County, WA?**
   Since 1979 and added on twice since then. Originally was a Willamette facility. Merged with Weyerhaeuser in 2001. Central location. Ship to Spokane, Oregon, western Canada. Stay east of the Cascade Mountains since they have plant in Seattle area. Also Idaho, Montana.

6. **Number of employees at location, full and part-time.**
   85 full-time employees. A few part-time (5).

7. **Outbound transportation volume/spend by mode.**
   a. Rail carload: 0
   b. Rail intermodal: 0
   c. Truckload (for-hire): next day deliveries, transit times critical.
      Zip Trucking handles 95% of it (Zip is regional carrier with large terminal located in the Moses Lake Industrial Park just off Wheeler Road).
   d. LTL: 0
      All rates negotiated at the Weyerhaeuser corporate office.

8. **Outbound destinations and estimated annual volumes to each destination.**

Wenatchee, Tri-Cities, Spokane, Brewster, and Chalan are top 5 destinations. Ship scrap and waste paper by truck since rail docks are open and tends to make quite a mess.

9. Inbound commodities (raw materials).

Starch by bulk railcar (covered hoppers). Brown paper (rolls) from Valiant, Oklahoma (Wey mill), Cedar Rapids, IA (Wey mill), Albany and Springfield, OR.

Starch 99.9% by rail. Valiant/Cedar Rapids: 100% rail, Albany and Springfield 60% by truck and 40% by rail. Backhauls of waste by truck via Spokane (could be rail oppty but need to coordinate). Track holds 5 cars on inbound side and 10 cars on spur track (plant at end of line).

10. Inbound transportation volume/spend by mode (if they control or pay the freight).

Inbound is all prepaid and controlled by supplier. Most paper from Weyerhaeuser but different division. Some from Longview Fiber, Longview, WA.

11. Inbound origins and estimated annual volumes from each origin.

(No Answer Given)

12. Any problems or issues with any of current transportation modes or suppliers on either inbound or the outbound side (i.e. quality of rail-service, freight car supply, rates, fuel surcharge, access to truck capacity, loss & damage, etc.)?

CBRW is very cooperative. Communicate via phone call when they have an issue but no sale calls in last several years. Just really looking for good service. Switched once per day, 1-3pm. 5 days per week. Would do second switch if needed and arranged ahead of time. Can unload 3 cars and then spot second set of 3 for morning shift. No issues with demurrage and bunching recently. Says must better service here than at their Yakima, WA plant. Usual 3-5 cars average. 9 cars today is unusual. Control demurrage with extra labor for unloading. Damage is “few and far between”.

No issues with truck supplies. Good relations with single, primary carrier. Outbound is shipped with some baled pack and some palletized.

13. Any plans to expand in Grant County? Any transport-related issues here?

Not at this time.

14. Any plans to expand in other North American locations that you are aware of?

Probably other locations but not aware of at this time.

15. Any plans to downsize or move at current location? If so why?

No.

16. Any issues or problems with current energy supplies (electricity and natural gas/price or quantity)?

No. Boiler is electric. Grant County is good location because of cheap power. One of reasons that this plant is here. ALL electric, no natural gas, just propane for forklifts.

17. Any labor or workforce issues (quality or quantity)?

(information not provided)

Northern Energy

Date of Interview: August 2005

12-1-05

1. **Company name, complete address.**
   Northern Energy
   3688 E. Broadway
   Moses Lake, WA 98837
   Located on segment 4 of the proposed project (abandonment portion).

2. **Contact name, position, phone number (try business card for this info).**
   Mark Lolkus
   District Manager
   (509) 750-9882

3. **Primary product(s) manufactured or processed at this location.**
   Propane and propane supplies.

4. **Estimated annual volume of output.**
   900,000 gallons per year.

5. **How long company at this location? Why located in Grant County, WA?**
   Since 1980, started by residents of the area.

6. **Number of employees at location, full and part-time.**
   5 total.

7. **Outbound transportation volume/spend by mode.**
   a. Rail carload
   b. Rail intermodal
   c. Truckload (for-hire or private)
   d. LTL

   All product ships by full truck load or rail car. Cost per load is approximately $119 per 11,000 gallons for rail carload and $116 per truck load. They usually utilize rail for approximately 3 carloads per month during the winter months when truck pricing increases, and use truck for all other shipping. Maximum rail potential volume would be 17 carloads per year at best.

8. **Outbound destinations and estimated annual volumes to each destination.**
   All destinations within a 100 mile radius of Moses Lake.

9. **Inbound commodities (raw materials).**
   "Ready to distribute" propane only.

10. **Inbound transportation volume/spend by mode (if they control or pay the freight).**
    Not available.

11. **Inbound origins and estimated annual volumes from each origin.**
    Anacortes, Alberta, Vancouver, Puget Sound, and Foundale. Volumes not available for interview.

12. **Any problems or issues with any of current transportation modes or suppliers on either inbound or the outbound side (i.e. quality of rail-service, freight car supply, rates, fuel surcharge, access to truck capacity, loss & damage, etc.)?**
    They do not feel changes in the surrounding rail system will impact them much. Transportation costs may increase slightly in the winter. However, labor costs may decrease as it takes much more labor to unload a railcar.

13. **Any plans to expand in Grant County? Any transport-related issues here?**
    Expect to expand capacity from 300,000 gallons to 900,000, which should not change transportation at all. Can increase volumes without needing to increase much infrastructure, facilities, or labor.

14. **Any plans to expand in other North American locations that you are aware of?**
    National company and all locations are expanding in a similar manner.

15. **Any plans to downsize or move at current location? If so why?**
    Never.

16. **Any issues or problems with current energy supplies (electricity and natural gas/price or quantity)?**
    Great Utilities.

17. **Any labor or workforce issues (quality or quantity)?**
    Everyone is local and quality.

Chemi-Con Materials Corporation

Date of Interview: December 2005

1. **Company name, complete address.**
   Chemi-Con Materials Corporation
   9053 Graham Rd. NE
   Moses Lake, WA 98837

2. **Contact name, position, phone number (try business card for this info).**
   Ray Roloff (509) 762-8788

3. **Primary product(s) manufactured or processed at this location.**
   Aluminum foil oxide layered – used in capacitors

4. **Estimated annual volume of output.**
   30-32 tons per month in coils; 180,000 sq. meters per month.

5. **How long company at this location? Why located in Grant County, WA?**
   Firm has been here for 10 years and moved to Grant County for the low energy costs. The production process for this product uses a lot of energy.

6. **Number of employees at location, full and part-time.**
   57 full- time employees and 8-9 temps at a given time.

7. **Outbound transportation volume/spend by mode.**
   a. Rail carload
   b. Rail intermodal
   c. Truckload (for-hire or private)
   d. LTL

   Use almost exclusively full truckloads; Rail is not responsive enough for car supply to meet service requirements of customers. Outbound transportation costs are slightly higher than inbound receiving from Japan since there is less demand for transportation back to Japan.

8. **Outbound destinations and estimated annual volumes to each destination.**
   All product ships to sister company in South Carolina or straight to Seattle for distribution.

9. **Inbound commodities (raw materials).**
   All inbound raw materials by truck – raw foil from Japan and dry and liquid acids.

10. **Inbound transportation volume/spend by mode (if they control or pay the freight).**

$2000 per load received from Japan. Slightly higher to ship outbound.

11. Inbound origins and estimated annual volumes from each origin.
Receive acids from the Midwest. Raw foil received from Japan. Specific volumes of each not known for interview.

12. Any problems or issues with any of current transportation modes or suppliers on either inbound or the outbound side (i.e. quality of rail-service, freight car supply, rates, fuel surcharge, access to truck capacity, loss & damage, etc.)?
The biggest problem with rail is car supply, big enough to eliminate it as a viable mode. Fuel surcharges in all modes are causing a problem. For expedited service, they have utilized air transport, but high instance of damage. Truck is working very well right now for definite delivery dates. If rail service improved considerably, they might re-evaluate the most economical mode as rail generally has many advantages. However, service is the key factor, and they do not feel any changes to the surrounding rail system will have much impact. Service issues seem to be with the Class I service to the short line interchange, and not with the local short line operator.

13. Any plans to expand in Grant County? Any transport-related issues here?
They plan to expand by upgrading the facility to handle more volumes. This will not require additional property and the current infrastructure will handle the added truckloads without a problem.

14. Any plans to expand in other North American locations that you are aware of?
None

15. Any plans to downsize or move at current location? If so why?
No

16. Any issues or problems with current energy supplies (electricity and natural gas/price or quantity)?
Excellent utilities and costs.

17. Any labor or workforce issues (quality or quantity)?
No issues. Most employees commute from within a 20-25 mile rural area surrounding Moses Lake.

Air America Fuel and Service

Date of Interview: December 2005

1. **Company name, complete address.**
   Air America Fuel and Service
   7810 Andrew St. NE #134
   Moses Lake, WA 98837

2. **Contact name, position, phone number (try business card for this info).**
   Larry Godden
   Owner, President, CEO
   (509) 762-2222

3. **Primary product(s) manufactured or processed at this location.**
   Aviation fuels and oils; Labor for aircraft service.

4. **Estimated annual volume of output.**
   4 million gallons per year of jet fuel or 952380 pipeline barrels (42 gallons in a pipeline barrel).

5. **How long company at this location? Why located in Grant County, WA?**
   Since the Air Force Base was deactivated in 1966; they were there locally already.

6. **Number of employees at location, full and part-time.**
   5 total plus 7 laborers as needed for the subsidiary company Jet Air for servicing aircraft.

7. **Outbound transportation volume/spend by mode.**
   a. Rail carload
   b. Rail intermodal
   c. Truckload (for-hire or private)
   d. LTL
      Not applicable – as all product is loaded directly onto aircraft at the airport.

8. **Outbound destinations and estimated annual volumes to each destination.**
   All product is loaded directly into aircraft at the airport.

9. **Inbound commodities (raw materials).**
   None

10. **Inbound transportation volume/spend by mode (if they control or pay the freight).**
    Not available in interview.

11. Inbound origins and estimated annual volumes from each origin.

Origin is Billings, MT by pipeline: 10000 gallons at a time (1430000 lbs. at a time). Spend figures not available for interview.

12. Any problems or issues with any of current transportation modes or suppliers on either inbound or the outbound side (i.e. quality of rail-service, freight car supply, rates, fuel surcharge, access to truck capacity, loss & damage, etc.)?

The pipeline works well. They have experienced issues with pipeline right of way disputes before, and related price increases. If rail service were more reliable and costs were competitive with the pipeline, they might consider it. Reliability is key for the jet fuel. Rail is used as a backup for moving the fuel in case of a breakdown. They would be concerned to lose rail as a backup.

13. Any plans to expand in Grant County? Any transport-related issues here?

Not at the moment. Expansion would completely depend on expansion plans of customers at the airport needing jet fuel. Expansions plans would increase volumes without needing additional property development or labor.

14. Any plans to expand in other North American locations that you are aware of?

This is a local company only, so no.

15. Any plans to downsize or move at current location? If so why?

This would depend on the local trends of the customers needing jet fuel.

16. Any issues or problems with current energy supplies (electricity and natural gas/price or quantity)?

This is the least expensive energy costs in the region and possibly nationally. There are fewer incentives now than there used to be, but so far it is still the leader in areas for low cost utilities.

17. Any labor or workforce issues (quality or quantity)?

No problems.

Moses Lake Industries

Date of Interview: December 2005

1. **Company name, complete address.**
   Moses Lake Industries
   8248 Randolph Road NE
   Moses Lake, Washington 98837

2. **Contact name, position, phone number (try business card for this info).**
   Michael Harvey
   Executive Vice President/ General Counsel
   Office Phone: (509) 762-5336
   Mobile: (509) 750-3447

3. **Primary product(s) manufactured or processed at this location.**
   High Purity Chemicals for the Semiconductor and Silicon Industries

4. **Estimated annual volume of output.**
   11,000,000 #s of multiple products

5. **How long company at this location? Why located in Grant County, WA?**
   Located in Moses Lake in 1984
   Located in Moses Lake because of low-cost electricity, preexisting Japanese community, low-cost property, and most importantly, the great people of Gant County.

6. **Number of employees at location, full and part-time.**
   Nearly 100 full-time and five part-time employees in Moses Lake.

7. **Outbound transportation volume/spend by mode.**
   a. Rail carload: zero
   b. Rail intermodal: zero
   c. Truckload (for-hire or private): 9,000,000#s ($0.07/#) $ 630,000
   d. LTL: 2,000,000#s ($0.18/#) $ 360,000

8. **Outbound destinations and estimated annual volumes to each destination.**
   Currently none but potentially
   Seattle, Washington: 5,000,000#s, approx. 25 carload equivalents
   Manassas, Virginia: 2,000,000#s, approx. 8 carload equivalents

9. **Inbound commodities (raw materials).**
   MLI's most important incoming raw material issue is Trimethylamine coming from the DuPont Chemical manufacturing facility in Belle, West Virginia.

10. **Inbound transportation volume/spend by mode (if they control or pay the freight).**
    Actual 2005: 3,055,000#s from Belle, West Virginia, approx. 12 carload equivalents.
    Forecasted 2006: 8,500,000#s from Belle, West Virginia, approx. 32 carload equivalents.
    Forecasted 2007: 11,600,000#s from Belle, West Virginia, approx. 44 carload equivalents.

11. **Inbound origins and estimated annual volumes from each origin.**
    DuPont facility in Belle, South Carolina: see above

12. **Any problems or issues with any of current transportation modes or suppliers on either inbound or the outbound side (i.e. quality of rail-service, freight car supply, rates, fuel surcharge, access to truck capacity, loss & damage, etc.)?**
    MLI desperately needs direct rail service to our facility because the increasingly aggressive attacks on our business from Chinese suppliers will never stop. The only way we can successfully compete and keep our 100 more-than-family-wage jobs here in Grant County is drive down our in-bound raw material transportation costs through the use of rail. Direct rail service to our facility would dramatically decrease our in-bound raw-material costs and allow MLI to keep our 100 higher-than-family-wage jobs here in Grant County.

13. **Any plans to expand in Grant County? Any transport-related issues here?**
    MLI has continuously expanded in Moses Lake over the last 20 years but with the astronomical increase in transportation costs, and with the increasing competition from Chinese manufacturers, unless we can get rail access into our facility our facility will have to close, probably within four years.

14. **Any plans to expand in other North American locations that you are aware of?**
    MLI has the option to expand our facility in Manassas, Virginia.

15. **Any plans to downsize or move at current location? If so why?**
    MLI will be forced to down-size in Moses Lake if we cannot get rail access to our facility.

16. **Any issues or problems with current energy supplies (electricity and natural gas/price or quantity)?**
    MLI has seen our natural gas prices increase dramatically.

17. **Any labor or workforce issues (quality or quantity)?**
    The Grant County workforce continues to meet our needs with fine dedicated people.

General Dynamics

Date of Interview: December 2005

1. **Company name, complete address.**
   General Dynamics
   9256 Randolf Rd.
   Moses Lake, WA 98837
   Located approximately 4 miles of the rail line.

2. **Contact name, position, phone number (try business card for this info).**
   Larry Posz
   Procurement Manager
   (509) 762-5381 x. 241

3. **Primary product(s) manufactured or processed at this location.**
   Explosives

4. **Estimated annual volume of output.**
   Did not know.

5. **How long company at this location? Why located in Grant County, WA?**
   Firm has been there for 20 years. Area is good for rocket research and development; propellants require specific humidity levels. Also, cheap power is a plus.

6. **Number of employees at location, full and part-time.**
   50

7. **Outbound transportation volume/spend by mode.**
   a. Rail carload
   b. Rail intermodal
   c. Truckload (for-hire or private)
   d. LTL
      All outbound and inbound is LTL. All outbound is directed by and paid for by customers.

8. **Outbound destinations and estimated annual volumes to each destination.**
   All over the country and some international.

9. **Inbound commodities (raw materials).**
   Chemicals and explosives.

10. **Inbound transportation volume/spend by mode (if they control or pay the freight).**
    Did not know.

11. **Inbound origins and estimated annual volumes from each origin.**
    Did not know.

12. **Any problems or issues with any of current transportation modes or suppliers on either inbound or the outbound side (i.e. quality of rail-service, freight car supply, rates, fuel surcharge, access to truck capacity, loss & damage, etc.)?**
    No special problems.

13. **Any plans to expand in Grant County? Any transport-related issues here?**
    Did not know.

14. **Any plans to expand in other North American locations that you are aware of?**
    Did not know.

15. **Any plans to downsize or move at current location? If so why?**
    Did not know.

    NOTE: All questions answered "Did not know" are because that information is at the corporate level in Redmond, WA.

16. **Any issues or problems with current energy supplies (electricity and natural gas/price or quantity)?**
    They would like to benefit from the excellent commercial rates for energy, but since they are on the old Air Force Base property and are served by several different meters, they do not qualify as commercial and get charged the residential rates. Changes in the requirements for qualifications or modernizing of the meters would benefit them.

17. **Any labor or workforce issues (quality or quantity)?**
    No issues. Everyone is local.

    RII was able to obtain information on the General Dynamics' plant selection for the development of the U. S. Marine Corps' Expeditionary Fighting Vehicle:

> In June 1996 General Dynamics Land Systems won the competition to develop and build the U.S. Marine Corps' new Expeditionary Fighting Vehicle (EFV), formerly known as the Advanced Amphibious Assault Vehicle (AAAV). With production scheduled to begin in 2005, General Dynamics began a high-profile site search, ending up with 10 separate bids from a variety of locations including Moses Lake, WA. In August 2003 they chose a bid from Prince William County, Virginia as their selection and begin negotiation of final terms for the proposed facility.

According to John Wosina, General Dynamics Land Systems, Vice President, Amphibious Systems, "the production site selection was complex and meticulous. We looked at six major factors: cost, facility and the related infrastructure, performance testing capability, environmental considerations, information technology and transportation availability; we selected the offer with the best value." According to a General Dynamics press release, "Prince William County's proposal was chosen as the top contender because of the high composite score measure against site selection criteria. The site provides the main assembly building and infrastructure, immediate access for automotive and water testing, and excellent transportation options."

Upon review of the final site location a number of interesting factors become apparent. First, the final site is conveniently located near General Dynamic's corporate offices in Falls Church, VA, as well as several important Marine Corps headquarters. In fact Prince William County is often referred to as the "Crossroads of the Marine Corps". A large General Dynamics EFV research and development facility already existed in Prince William County at the time of the final selection.

While the selected site is part of Dominion Virginia Power's Possum Point plant, it did not have direct rail or highway access at the time of selection. Rail and highway access costs are being underwritten by grants from the Virginia Industrial Road Access Fund as well as the state's Railroad Access Fund. Rail service to the site will be provided by CSXT in spite of the relatively poor service reputation of this rail carrier. In fact, rail access will be via a mainline that is congested with large volumes of freight trains as well as Amtrak intercity passenger trains and Virginia Railway Express commuter trains. According to CSXT managers that we interviewed, CSXT had been told by General Dynamics not to expect much rail traffic either to or from this facility.

Many of the components for the EFV will come from automotive industry suppliers, most of whom are located in the eastern half of the United States. An assembly plant in Washington State would have incurred substantially higher inbound transportation costs.

Like many states, the Commonwealth of Virginia offers substantial financial incentives to attract new industry, especially in the area of workforce training. General Dynamics Land Systems qualified for a $2 million performance-based grant from the Virginia Investment Partnership, a program available to existing Virginia firms. Virginia is ranked fifth nationally for states providing financial support for workforce training. Prince William County was scheduled to receive a $500,000 grant from the state to assist with the project. As of this date construction on the proposed General Dynamics' facility has not begun.

Boeing

Date of Interview: December 2005

1. **Company name, complete address.**
   Boeing Realty
   8988 Tyndell Rd.
   Moses Lake, WA 98837
   Outskirts of the airport, no rail access

2. **Contact name, position, phone number (try business card for this info).**
   Dale Broughton
   Site Representative
   (509) 762-2705

3. **Primary product(s) manufactured or processed at this location.**
   Facility is a warehouse only for storage of tools for making airplane parts (large tools such as scaffolding for building huge airliners).

4. **Estimated annual volume of output.**
   Did not know – all processed by corporate headquarters in Seattle.

5. **How long company at this location? Why located in Grant County, WA?**
   Company purchased the property in the late 70's. At the time there were research and development programs going on there. When they were completed, it was changed to warehousing only.

6. **Number of employees at location, full and part-time.**
   Three.

7. **Outbound transportation volume/spend by mode.**
   a. Rail carload
   b. Rail intermodal
   c. Truckload (for-hire or private)
   d. LTL

   All transportation is chosen, billed and paid for by corporate headquarters in Seattle. Mr. Broughton does not believe they would use rail if they had the access since their personnel would require special training to utilize it. As it stands, all freight for this facility moves by truckload within the Boeing system, the trucks sometimes making several stops to other Boeing facilities in an LTL style, and the drivers are Boeing employees. Changing modes of transportation on a large scale could have employee impacts for Boeing.

8. **Outbound destinations and estimated annual volumes to each destination.**
   90% outbound goes to Seattle, the other 10% goes to other Boeing facilities in Washington – Everett. Outbound volumes are 3-4 trucks per month – which are the same trucks inbound.

9. **Inbound commodities (raw materials).**
   Only fully manufactured items come in for storage.

10. **Inbound transportation volume/spend by mode (if they control or pay the freight).**
    No information – handled by corporate headquarters.

11. **Inbound origins and estimated annual volumes from each origin.**
    Inbound origins are mainly Seattle. Rarely receive materials from other Boeing facilities in Washington and California. 3-4- truckloads a month.

12. **Any problems or issues with any of current transportation modes or suppliers on either inbound or the outbound side (i.e. quality of rail-service, freight car supply, rates, fuel surcharge, access to truck capacity, loss & damage, etc.)?**
    Few problems with current truckload mode – all in house trucks and drivers, all paid by corporate. They fill up trailers for multiple stops and use the same trucks for inbound and outbound.

    Note: When the pass closes due to weather, it can impede operations, but have never had a serious problem.

13. **Any plans to expand in Grant County? Any transport-related issues here?**
    Not sure about expansion plans as that is decided by Seattle, but the company has been reducing holdings in Seattle, and these closures increase the volume and capacity needed at rural (cheaper) facilities like Moses Lake. They would like to expand their warehouse capacity, but do not expect that to affect transportation at all.

14. **Any plans to expand in other North American locations that you are aware of?**
    Believe the general trend is toward downsizing.

15. **Any plans to downsize or move at current location? If so why?**
    Believe the general trend is toward downsizing nationally, but do not see that happening at Moses Lake, because they get the volume when the larger facilities downsize.

16. **Any issues or problems with current energy supplies (electricity and natural gas/price or quantity)?**
    It is cheaper here than other areas.

17. **Any labor or workforce issues (quality or quantity)?**
    None

18. **Any other comments regarding the rail changes proposed in Moses Lake and how this might affect your operations at Moses Lake?**

    They do not believe that any changes in the rail system will affect them at all.

Moses Lake Ethanol Plant

Notes and Research Findings

Pacific Rim Ethanol LLC plans to construct a $133 million plant in Moses Lake, WA that would produce 100 million gallons per year of fuel ethanol from corn at the defunct sugar beet factory on the east side of Moses Lake. The plant will employ about 60-70 full-time workers and have nearly 300 contracted jobs for security, plant maintenance and transportation.

As originally planned, the plant would have used barley and wheat from Washington farms to produce fuel ethanol and a variety of by-products. However, it is now planned for the plant to use corn as the primary raw material/ingredient for the production of ethanol. By-products from this revised design will include dried distillers grain, which is a high protein animal feed, as well as CO2.

It is expected that more than half the corn used will be purchased from the local area and surrounding region. This product will probably be trucked from local growers to the plant. The remainder will come from the Midwest (Nebraska) and probably move by rail in 110 car unit trains. It is still planned for the ethanol production to be shipped to end users in Seattle, Portland and Spokane. Most of this production will probably move in railroad tank cars, with the balance moving by truck. At this time it is unclear exactly how the various by-products will be disposed of or transported.

Fuel ethanol currently used in the Pacific Northwest is made at plants in the Midwest and Caribbean. The Moses Lake facility would be the first such facility located in the Pacific Northwest although similar facilities are under construction or in operation in Montana, South Dakota and Wyoming. According to industry reports, ethanol demand in the Northwest is estimated at about 60 million gallons per year, but this could increase as the result of price increases in petroleum-based fuels as well as changes in clean air laws in the states of California, Oregon and Washington.

A 2001 study by WSU and the National Renewable Energy Laboratory estimated that a 40 million gallon plant in Moses Lake could product ethanol at approximately $1.70 per gallon, and would provide an economic “value-add” of $19.6 million to Grant, Franklin, Adams and Lincoln counties.

In July 2003 the City of Moses Lake received a $504,000 state loan for road and rail improvements near the plant site. Pacific Rim selected an existing industrial site instead of undeveloped land in order to minimize any additional harm to the environment. The company proposes to use lined lagoons already on the property to let wastewater settle and evaporate.

Air-quality permit for Moses Lake ethanol plant was issued in September 2003. This permit was reportedly the largest hurdle to clear before starting construction.

Operation of plant was originally scheduled for 2004. Construction was delayed in early 2003 due to a dispute between Pacific Rim and the Central Washington Building Construction Trades Council over bidding on plant construction and wages.

Work on the concept actually began in 2001 when Pacific Rim received a $500,000 Federal government grant. When investors failed to materialize the company closed offices in Moses Lake and returned to their home in Toronto. The president and CEO of Pacific Rim LLC is Doug MacKenzie, who helped set up Commercial Alcohols, Canada's leading ethanol producer. When Moses Lake was originally selected, MacKenzie was quoted as saying; "this location is basically equi-distant from the key markets for ethanol distribution. Seattle, Portland and Spokane are all potentially important markets for the consumption of ethanol and many of the other products the plant will produce. That will reduce costs for consumers because freight costs will be minimized simply because we're closer to the point of purchase." MacKenzie also cited the availability of grain, inexpensive energy and a good interstate highway, plus the availability of land, as all key reasons for selecting the site. He claimed "Moses Lake may be the best place in North America for a project like this to succeed."

At this time a current start-up date is not available due to delays in obtaining permits and financing. However, it is anticipated that start-up would occur approximately 18 months after construction actually began.

Appendix J

Customer Contact Chronology

Northern Columbia Basin Rail Project

Appendix J
Customer Contact Chronology

The following time line details the procedures taken by RII in the contacting, scheduling and conducting interviews for the *Northern Columbia Basin Railroad Project*:

8-8-05

Kick-off meeting, notice to proceed, action plan conference call.

8-9-05

Questionnaire development and approval.

8-10-05

Request customer list from CBRW and Moses Lake Airport Authority. Received list from CBRW at 5:44pm.

8-11-05

Mr. Jim Giblin, of RII, contacted the following customers from CBRW list:

- Advanced Silicon – (509) 762-8904 – Clint Peters – left voice mail
- message
- Basic American Foods- (509) 765-8601 x 422 – Marvin Brooks – left
- voice mail message
- D&L Foundry - (509) 765-7952 – Joe Wieberg – left voice mail
- message
- D&L Foundry returned message and confirmed interview
- appointment
- Weyerhaeuser - (509) 765-0262 – Lonnie Stussey – left voice mail message
- - Weyerhaeuser requested survey form, attempted to email but got
- error message.
- JR Simplot - (509) 765-3444 – Brent Bishop – left voice mail message
- - also researched company contact information on internet
- - Emailed JR Simplot – Brent Bishop and Genie Industries – George
- Santiago with form.

Received list from Port of Moses Lake at 6:06pm.

8-12-05

- Weyerhaeuser confirmed appointment. Additional calls made by Jim Giblin to contact customers from Port and CBRW list:

- Advanced Silicon Material – (509) 762-8904 – Clint Peters – left voice mail message.
- Basic American Foods – (509) 765-8601 x 422 –Marvin Brooks – left voice mail message.
- Northern Energy – (509) 765-8553 – Mark Lolkus – message left
- Genie Industries – (509) 762-3221 – George Santiago – message left
- Ethanol Plant – Called and received contact info and schedule for Doug Hunter.

Also, RII administration contacted the following customers:

- Advanced Silicon – (509) 762-8904 – Clint Peters – message left with receptionist.
- Basic American Foods – (509) 765-8601 x. 422 – Marvin Brooks – message with assistant.
- Brotherton Seed – (509) 765-1816 – Heidi Martinez – voice mail message.
- Ferrell Gas – (509) 765-5211- Zane Newcomb - voice message left.
- Eka Chemical – (509) 765-6400 – Elias Tijerina – rang and rang with no answer.
- Cenex Harvest States – (509) 765-5617 – Marion Rice – message sent to voicemail.
- National Frozen Foods – (509) 766-0793 – Tony Alleman – voice mail message.

8-15-05

Jim Giblin traveling to Moses Lake; RII Administration contacted the following customers:

- Brotherton Seed – (509) 765-1816 – Heidi Martinez – She asked us to email the information and questionnaire to her. They called back that day and scheduled an interview.
- Ethanol Plant - (416) 862-5700 – Doug Hunter – No answer.
- Called Doug Hunter cell phone: (416) 578-3555 – left a voice mail message.
- - Doug Hunter called back and said he did not know his schedule and
- we had to contact Terry Brewer.
- - Terry Brewer – (509) 764-6579 – Left message with receptionist.
- Weyerhaeuser – (509) 765-0262 – Lonnie Stussey – Called to get email for questionnaire

- - Emailed questionnaire and appointment times.
- Basic American Foods – Marvin Brooks returned call and referred us to John Nelson.
- - Basic American Foods – (509) 766-3246 – John Nelson – Connected
- and scheduled.
- Ferrell Gas – (509) 765-5211- Zane Newcomb – Scheduled Interview
- - Ferrell Gas called back – Aaron Gimmeson Scheduled interview as
- the correct contact.
- Genie Industries – Emailed George Santiago with questionnaire and schedule times.
- Moses Lake Iron and Steel – Glen Dart – Called out of the blue eager to schedule and interview (heard about study from Brotherton Seed).
- Eka Chemical – (509) 765-6400 – Elias Tijerina – rang and rang with no answer; tried to call 3 separate times during the day.
- - Researched Eka Chemical online to find a better contact number –
- found email address for Calvin Greene.
- - Emailed Calvin Greene with information and request for interview.
- Northern Energy – (509) 765-8553 - Mark Lolkus – Spoke to Mr. Lolkus and he scheduled an interview at 10:00am and confirmed address.
- Americold Logistics – (509) 765-7838 – Brad Kocan – left message with receptionist.
- National Frozen Foods – (509) 766-0793 – Tony Alleman – message with receptionist.
- Cenex Harvest States – (509) 765-5617 – Marion Rice – message sent to voicemail.

8-16-05

Continued scheduling while Jim Giblin was doing interviews in Moses Lake. Administration contacted the following customers Tuesday: Researched additional contact information online to try and connect with some people. Interview schedule, questionnaire, Jim's contact info sent to Paul Weber to assist, attend interviews, etc.

- Eka Chemicals – Calvin Greene emailed back to say the phone number was having technical problems. He gave the number (509) 764-1505 to call him later in the day. Called that number in the afternoon and he said that the project would not affect them and they did not want an interview. We said we thought it would and we would check on it and call him back and he agreed.
- Advanced Silicon (Solar Grade): emailed on-line contact at tor.hartmann@sgsilicon.com. Called Solar Grade (509) 766-9337 –

John Hill – He asked for questionnaire to be emailed john.hill@sgsilicon.com and then said to keep trying Clint Peters.

- Called Clint Peters – (509) 762-8904 – let receptionist know urgency of matter and she connected with Clint Peters, who scheduled interview.
- Terry Brewer – (509) 764-6579 – Message to receptionist with details on what Doug Hunter said; wants to confirm schedule before scheduling interview.
- Cenex Harvest States – (509) 765-5617 – Marion Rice – message sent to voicemail.
- National Frozen Foods – (509) 766-0793 – Tony Alleman – message with receptionist.
- Americold Logistics – (509) 765-7838 – Brad Kocan – left message with receptionist.

8-17-05

Jim reviewed area and solicited another interview with customer on the line: Elmer Hansen Produce who was happy to give an interview. Jim also confirmed by investigation that Eka Chemical receives railcars and unloads materials and we need to contact them still as one of the biggest receivers. Jim also contacted by email Megan Smith at Grant County Economic Dev. For information.

- Simplot cancelled interview for Thursday for email.
- Administration continued to contact and schedule interviews.
- National Frozen Foods called back – Tony Alleman – He said he lives in Toronto and to try a local contact from their main Moses Lake Number.
- Genie Industries – George Santiago emailed back and scheduled interview. Responded to confirm.
- - Interview schedule sent to Paul Weber in morning.
- Eka Chemicals – Calvin Greene – 509-764-1505 – Left voice message that he was a large rail receiver and the project would affect him, please call to schedule interview.
- Cenex Harvest States – (509) 765-5617 – Marion Rice – message sent to voicemail.
- National Frozen Foods – (509) 766-0793 – Asked for Transportation Manager or someone who could help with this study and message was left with receptionist.

- Americold Logistics – (509) 765-7838 – Brad Kocan – left message with receptionist.
- Ethanol Plant – (509) 764-6579 – Terry Brewer – left message with receptionist
- Called (416) 578-3555 Doug Hunter and he said he was leaving Thursday and too bad we missed him.
- Inflation Systems – (509) 762-5549 – Asked for person who would know the most about transportation issues – left message with receptionist.

8-18-05

- Simplot – (509) 765-3443 – Steve Henning – emailed to say he would meet with Jim, interview re-scheduled for Friday
- Northern Energy – Mark Lolkus did not show up for his scheduled interview.
- Inflation Systems – (509) 762-5549 – Called again and left another message with receptionist to find best person for interview.
- Americold Logistics – (509) 765-7838 – Brad Kocan – left message with receptionist.
- National Frozen Foods – (509) 766-0793 – Asked for Transportation Manager or someone who could help with this study and message was left with receptionist.
- Cenex Harvest States – (509) 765-5617 – Marion Rice – message sent to voicemail.
- Eka Chemicals – Calvin Greene - (509) 764-1505 – Left voice message.
- Inflation Systems – (509) 762-5549 – left message with receptionist.
- Ethanol Plant – Terry Brewer – (509) 764-6579 – Message to receptionist.

8-19-05

Last minutes attempts for Jim's last day in Moses Lake:

- Northern Energy – Attempted to fax questionnaire to Mark Lolkus to complete interview: (509) 765-2263.
- - Fax receipt confirmed.
- Eka Chemicals – Calvin Greene – (509) 764-1505 – Left voice message.
- Called Doug Hunter cell phone: (416) 578-3555 to see if he could meet with Jim in Seattle – could not connect schedules.
- Cenex Harvest States – (509) 765-5617 – Marion Rice – message sent to voicemail.

- Inflation Systems – (509) 762-5549 – left message with receptionist.
- Americold Logistics – (509) 765-7838 – Brad Kocan – left message with receptionist.

8-22-05

Requested assistance from Paul Weber to contact the following Moses Lake customers:

- Northern Energy: let know that we contacted Mark Lolkus (509) 765-8553
- Eka Chemicals: did not specify our contact information.
- Ethanol Plant: Doug Hunter – would like insight from Doug as well as Terry Brewer.
- Americold Logistics: did not specify particular contact
- Genie Industries – hoped to get additional information from their corporate offices since they make the decisions.
- Inflation Systems: would like to see if rail access would change their operations, but no luck in contacting them.

Notified Paul that Jim would be able to contact Genie Industries Corp. office, Inflation Systems, Northern Energy, and Ethanol Plant information, so would only need help with EKA Chemicals and Americold Logistics.

8-26-05

Requested additional information from Terry Brewer by email: tbrewer@grantedc.com on Ethanol Plant.

8-29-05

Received additional information on proposed Ethanol Plant from Terry Brewer.

8-31-05

Called and spoke with Genie Industries: Tim Meyer – Corporate Traffic Manager out of Redmond, WA for further support.

11-11-05

Emailed Michael Harvey of Moses Lake Industries mharvey@mlindustries.com with request for interview.

11-21-05

Emailed Mr. Harvey of Moses Lake Industries again with questionnaire attached and called (509) 762-5336 – left message on voice mail.

12-1-05

- Calls to Michael Harvey of Moses Lake Industries; 1 message left on voice mail; 1 message left with receptionist.
- General Dynamics – Larry Posz (509) 762-5381 x. 241 – Message left on voice mail.
- Inflation Systems – Thom Walsh (509) 762-3149 – Contacted, emailed interview questionnaire thom.walsh@takata.com.
- - Scheduled interview for 12-2-05.
- Chemi-con Materials – Ray Roloff – (509) 762-8788 – Message left on voice mail.
- Air America Fuel and Service – Larry Godden contacted and partially interviewed. Asked to call back later that day to finish.
- Northern Energy – Mark Lolkus – (509) 750-9882 - Message left on voice mail.
- Boeing Realty – Mike Shigley – (425) 865-1181 – Left message on voice mail.

12-2-05

- Chemi-con Materials – Ray Roloff returned call and provided interview.
- Air America Fuel and Service – Larry Godden – called Mr. Gooden back and completed interview.

12-05-05

- General Dynamics – Larry Posz – Left message on voice mail.
- Inflation Systems – Thom Walsh – Left message on voice mail.
- Moses Lake Industries – Michael Harvey – Left message on voice mail.
- Northern Energy – Mark Lolkus – Contacted and provided phone interview.
- Boeing Realty – Mike Shigley – Left message on voice mail.

12-07-05

- Boeing – Researched alternative contact – Called Lynne Brady – Rail Coordinator in Seattle – (206) 655-1131 – Notified that questionnaire had to be approved by security.
- Emailed questionnaire and an explanation of the project background to Lynne Brady lynne.m.brady@boeing.com.

- Moses Lake Industries – Michael Harvey returned call and said that he would be emailing questionnaire response tomorrow.
- Inflation Systems – Thom Walsh – Left message on voice mail with urgency that study was almost completed.

12-08-05

- General Dynamics – Larry Posz called back and provided interview.
- Moses Lake Industries – Received completed questionnaire from Michael Harvey.

12-15-05

Boeing Realty left a message to contact Dale Broughton (509) 762-2705 for the interview. RII contacted Mr. Broughton and completed interview.

Appendix K

Stakeholder Comments on Draft Feasibility Study

Northern Columbia Basin Rail Project

Port of Moses Lake

PORT OF MOSES LAKE
GRANT COUNTY INTERNATIONAL AIRPORT
Foreign Trade Zone #203

7810 Andrews St. N.E., Suite 200
Moses Lake, WA, USA 98837-3204
PHONE 509-762-5363
FAX 509-762-2713
E-MAIL info@portofmoseslake.com
WEB SITE www.portofmoseslake.com

January 24th, 2006

Kirk Fredrickson
Planning and Policy Coordinator
WSDOT Rail Office
PO BOX 47387
Olympia, WA 98504-7387

RE: Northern Columbia Basin Railroad Project Feasibility Study Draft Comments

Mr. Fredrickson:

The Port of Moses Lake is the primary proponent for the Northern Columbia Basin Railroad Project. The Commissioners and Staff have reviewed the draft Feasibility Study dated January 2006 and offer the following comments:

We compliment the WSDOT Rail Office and Project Team for accomplishing the scope of work, which had been determined at the beginning of the project. This feasibility study appears to respond to every item that was identified and should serve as an excellent base for developing future action plans.

The Port of Moses Lake owns and operates the Grant County International Airport and frequently contracts with engineers for studies and engineering for repair of our massive runway structures. This familiarity with our aviation engineering process lead to a slight misunderstanding on our part. We thought this railroad study was to be an 'engineering' study… but it turned out to be a 'feasibility' study with 'conceptual' engineering. Whereas we understand the importance of getting our feet firmly on the ground with a 'feasibility' study, it falls short of our expectations.

- Chapter 1: OK
- Chapter 2: OK
- Chapter 3: Good stuff
- Chapter 4:
  - Page 4-13. Sticker shock. Makes us wonder if it's correct.
  - 'Conceptual' cost estimates were not what we expected.
  - Contingency of 35% leads us to realize that the engineering study is very broad.
  - Disappointed that the cost estimates do not include STB licensing or SEPA documentation. They should be included here even if they are yet undetermined. Exhibit 4.10 is where people will look for cost estimates and STB and NEPA estimates should be included in this chart.
- Chapter 5:
  - This chapter is confusing to us and will require more study and explanation..

  - Exhibit 5.12 (several segments) Rather than saying that "construction costs will not provide a return to the funding entity in the foreseeable future", could we say that "A return on investment to the funding entity will require additional rail freight revenues."
- Chapter 6: Good reading.
- Chapter 7:
  - We're not sure we agree with the implementation process list. We would have hoped for an expansion of each item to further explain the processes.
  - For example, why would we need to wait for STB or NEPA before we secure the rights-of-way?
- Glossary: OK
  - Appendix A: Interesting. Is it relevant?
- Appendix B: We're not sure what this says. Can you add a summary for us?
- Appendix C: Interesting.
- Appendix D: OK.
- Appendix E: OK for a conceptual study. However, not really useful for detailed work.
- Appendix F:
  - Seems to be missing a construction cost estimate for the 'preferred' route. Are we missing a page or what?
  - Excellent breakdown of estimated costs.
  - It is interesting to note that contingencies, mitigation, engineering, construction management and sales tax account for 61.8% of the total cost.
- Appendix G: Interesting.
- Appendix H: The shipper interviews would appear to tell the story about freight movement in and out of Moses Lake. However, we believe it has missed a significant point… that the Moses Lake railroad project is necessary for heavy industrial development in the Moses Lake industrial areas. Although not supported by this particular survey, we believe we can make a strong case for investment in a new rail line from Wheeler to the Grant County International Airport Industrial Park. The Port of Moses Lake, landowners, Grant County EDC and the State of Washington Department of Community, Trade and Economic Development have worked with several high profile companies in the past five (5) years and have been REALLY close to landing some significant industries in this area. If necessary to prove the point, we suggest a follow-up study of potential industrial development that will use the new rail line.
- Appendix I: OK.
- Attached Maps: Excellent.

Sincerely,
PORT OF MOSES LAKE

Albert E. Anderson
Industrial Development Manager

Port of Quincy

-----Original Message-----
From: Port of Quincy [mailto:port of quincy@earthlink.net]
Sent: Wednesday, January 18, 2006 8:41 AM
To: Fredrickson, Kirk
Cc: Senn, Don; Honsinger, Dave; Anderson, Stephen; Rowswell, Mike; Ivanov, Barbara
Subject: Northern Columbia Basin Railroad Project Draft Feasibility Study

Kirk,

Thank you for sending the Northern Columbia Basin Railroad Project Draft
Feasibility Study (attached) for us to review.
For the most part, the attached draft is very thorough and professional and obviously included a great deal of analysis and research. As a result, the Port of Quincy's appreciates WSDOT's and the Port of Moses Lake's hard work in putting all of this information together.
The Port of Quincy generally supports Segments 1 through 4 of this project but continues to be very concerned about references to "storage tracks" at Soap Lake in Segment 5 of the attached feasibility study. We have made these concerns known several times since September; however, this "storage track" issue at Soap Lake continues to linger. Specifically, the attached report includes the following references to "storage tracks" at Soap Lake on Pages 38 and 122:
Page 38
"About two miles south of the proposed BNSF connection point, three turnouts are used in the arrangement of a yard lead, to provide south access to interchange / storage tracks. The main track (and the tracks just described) parallel each other and continue to the north to another three turnout lead configuration. Just north of that point, another turnout provides a "wye"
arrangement of two tracks - one leading to the west and one to the east - where these tracks are connected with two additional turnouts in the BNSF's main line. These tracks would allow a BNSF train from either direction to quickly "clear" the main line and perform switching clear of the main line and "arrange" another train for east- or west-bound movement on the main line. These tracks would allow the Columbia Basin Railroad or other designated operator of the new rail line (Segment 5) to leave and pickup cars clear of the BNSF's main line. This segment primarily traverses very dry, desolate and undeveloped land."
Page 122
"About two miles south of the proposed connection point, three turnouts are used in the arrangement of a yard lead, to provide south access to 3 each 7400 feet interchange and storage tracks. The main track (and the tracks just described) parallel each other and continue to the north to another three turnout lead configuration. Just north of that point, another turnout provides a "wye" arrangement of 2 each tracks - one leading to the west and one to the east - where these track are connected with two additional turnouts in the BNSF's mainline. This track would allow a BNSF train from either direction to quickly "clear" the mainline and perform switching clear of the mainline and "arrange" another train for east or west bound movement on the mainline. These tracks would allow the Columbia Basin Railroad or other designated operator to leave and pickup cars, again entirely clear of the BNSF's mainline. The curves on the line are limited to 7degree-30minute (764' radius) curves at the ends and 3 degrees (1910' radius) in the middle.

The grade on this segment does not exceed 0.5 percent. This segment primarily traverses very dry, desolate and undeveloped land. The right of way costs clearly indicate this."

The Port of Quincy Commissioners strongly believe that "storage tracks" at Soap Lake are unnecessary and duplicate with the Port of Quincy's already completed 3500 feet of storage track and also compete with the Port of Quincy's recent request to State and Federal policymakers to extend its storage track to 7000 feet (which is what BNSF generally requires to accommodate a unit train).
As the Central Washington Regional Freight Facility (at the Port of Quincy) already has adequate storage track and will be extending its storage track even further, it would make sense for the railcars that go to Soap Lake to then be pulled by a shortline railroad to Quincy and then picked up by the BNSF mainline train there.
There are situations or examples in other parts of the country of BNSF allowing shortline operators to use mainline tracks under certain conditions. If all of the rail traffic or cargo from the Quincy Valley, Moses Lake and Othello could be grouped or clustered at the Port of Quincy, then it would be economically viable for BNSF to pickup a unit train at Quincy. On the other hand, it would be highly unlikely that BNSF would ever stop at both Quincy and Soap Lake to pickup additional railcars to add to its mainline train.
This is not the first time we have conveyed our position on this matter, but for whatever reason, the issue of "storage tracks" at Soap Lake continues to come up.
As the state and federal government have already invested a great deal of funding in the Central Washington Regional Freight Facility at the Port of Quincy and it is fairly short distance from Soap Lake, it would be a complete waste of taxpayer funds (in our opinion) to consider "storage tracks" at Soap Lake.
Thank you for your consideration of our comments concerning the attached draft.
We look forward to hearing from you.
Pat Boss
Public Affairs Advisor
Port of Quincy

ASPI Group, Inc.

-----Original Message-----
From: Kim Foster [mailto:kfoster@aspigroup.com]
Sent: Monday, January 23, 2006 3:39 PM
To: Fredrickson, Kirk; Anderson, Albert
Cc: Ivanov, Barbara; Mulliken, Sen. Joyce; "Holmquist, Rep. Janea"; Repbill@billhinkle.us
Subject: NCBR Feasibility Draft Report - ASPI Group Comments

Kirk -

I have reviewed the Draft Feasibility Report for the North Columbia Basin Draft Feasibility Report. I have the following comments:

As you are aware, ASPI Group, Inc., is a Project Partner. As such, we have been one of the initiators/proponents of the rail project for the past several years. We also have close working relationships with Senator Murray, the State Congressional Delegation and the Governor's office. I hold a degree from the University of Washington with Distinction in Economics. I have served on several initiatives to advance economic development in the region and we find that these rail projects are critical to the continued viability of the Grant County International Airport and North Central Washington as a heavy-industrial site. With that as a prelude, here are my specific comments:

1. Page 2-2. I believe that there needs to be an expansion of the description of the purpose of the study as it relates to current economic conditions in the region. As written, the study is very project focused with only brief descriptions of what we are trying to accomplish with an integrated project. As legislators read this report, it is critical that they understand the overall picture of what the project means to the economy of the whole State of Washington and specifically on attracting large footprint, heavy industrial employers. I believe that there should be a discussion that is predominantly placed in the report that Washington State actively engages in the recruitment of heavy industrial prospects. Because of the lack of available heavy-industrial zoned properties in Western Washington, the heavy transportation congestion of all modes in the Puget Sound arena, and intensive environmental/regulatory issues, and high cost land pricing, Washington State simply cannot be competitive in these recruitment efforts if Western Washington sites are proposed. Western Washington is simply not competitive with other states in attracting these large employers. It is also important to note that unemployment is very high in Grant County/North Central Washington. Creating employment opportunities does not seem to be mentioned as a positive economic attribute of these projects.

North Central Washington (Grant County) *can* be competitive with other states for the large recruitment projects. In fact, since 2000, we have had heavy participation in and have made 'final-contender' status for several major projects (RFP/RFQs) Those projects include NASA, Lockheed Martin, General Dynamics, and, of course, the Boeing 787 project. Current projects include, aerospace, chemical, insulation, ethanol, and silicon manufacturing sectors. Each of those prospects that we have engaged identified critical shortcomings in the existing rail infrastructure and/or routing. The Grant County area boasts one of the largest commercial runway complexes in the United States, the lowest electric power rates in the nation, a massive fiber-optic system and abundant, low-cost, large parcel, heavy-industrial zoned lands. However, as the requirement for advanced rail connectivity becomes paramount to these users, Grant County, and the State of Washington, will quickly loose any competitive ability. To that end, this feasibility study should not be viewed as Grant County-centric but should be viewed in the context of industrial recruitment/economic development for the State of Washington as a whole.

2. Page 2-3. There is a very brief discussion about the Growth Management Act that I believe should be expanded. GMA required counties to identify and inventory heavy-industrial zoned lands. Under GMA, those identifiers are not easily altered. I believe that there needs to be a discussion that this rail line services those areas that have been specifically identified as the heart of Grant County's heavy-industrial zoned lands and would be complimentary to the other industrial amenities that are pre-existing. In effect, you have state of the art airport, electric power, fiber-optic, water and sewer infrastructures in a low cost environment being dragged down by a 1940s vintage rail system. Other segments of the infrastructure providers have made continual investments in making sure their infrastructure remained competitive while rail improvements have languished. That comment should not be taken adversely against the CBRW which has an outstanding customer service and safety record. They cannot be expected to make what should be a 'public investment' in the State's infrastructure. Concurrency is vitally important to the industrial recruitment process.

3. Page 3-8 Footnote 3. I believe that including the WPPA 2004 Rail Capacity Study only as footnote is inappropriate. The WPPA study found that the capacity of east/west movements on the state's existing rail lines will be at/over capacity before the end of the decade. The WPPA study and recent testimony from BNSF have indicated double digit growth in rail traffic. One of the solutions identified in the WPPA study that would extend/enhance tunnel capacities (as reported to about 2050) is Directional Routing whereby Steven Pass would carry only westbound traffic and Stampede Pass would handle eastbound only. There is no discussion in the report regarding the global rail congestion issues in Washington and the fact that if Directional Routing is implemented as forecasted, that heavy-industrial complexes of North Central Washington would be all but 'cut-off' from connectivity to the Ports of Seattle and Tacoma. That is particularly important to the analysis of Segment 5's economic model because if DR is implemented, the lack of a northern connection could have severe adverse impacts on regional shippers to the Ports of Tacoma and Seattle.

4. Page 3-8. I believe that the ROW costs would be much lower than suggested on the Phase 1, 2, and 5a segments. Adjacent landowners would have significant benefit from the rail access and would anticipate 'donating' the ROW. Similarly, construction costs and maintenance costs of Phase 5a should not be at 'industry averages' but should be substantially less. We intentionally identified a route that, as you described, is across flat, barren, terrain. The line would be virtually straight and level with no impacts on wetlands, need for bridges, etc.

5. Page 4-10. There is an ongoing concern from a related constituent, the Port of Quincy, that the Soap Lake connection point to the BNSF mainline (Phase 5a) could result in a negative impact to their yard operations. The concern is that if significant storage capacity is implemented at the Soap Lake connection, that the function of making up unit trains could shift from their yard. I believe that the description of the connection at Soap Lake should include less specific detail. The specific detail should/could be delayed until specific user(s) for the connecting line are identified. It appears that the level of detail for the connection point storage/holding facility is overly detailed at this point causing POQ concern. If Quincy/CBRW are able to negotiate an agreement as assumed with BNSF to move cars to the Quincy yard from Soap Lake on the mainline, the need for storage at the junction may be minimal or eliminated. I don't see a real need to be 'over-engineering' any scenario at this point. The important point for the study to identify is the need for the northern BNSF connection.

6. I would advocate eliminating all reference to Segment 5b (Moses Lake to Quincy line) altogether. This proposed segment was identified late in the process, and the enormous

cost identified is outside the spectrum of 'possible' thereby having, in my opinion, a negative effect on the aspect of a Segment 5 connection at all.

7. Page 4-14. I believe that the contingency costs on Phase 5a is overstated given the identified route as straight and level.

8. Page 5-8. I have general concern with the conclusion of this section that 'no companies found that their shipping patterns would be altered is any of the segments were completed including Segment 5a. Again, that statement has a negative connotation without accompanying analysis of the future impact on economic development projects outlined above. It also doesn't mention if in the interviews, there was any explanation/forecasts given on the prospect of higher fuel costs, Directional Routing, etc. Without the context of the interview, it is likely a shipper may have thought that the improvement suggested could cost them additional sums so a negative answer would be most advisable pending further information.

9. Page 5-19. Again, the maintenance costs associated with Segment 5a seem excessive.

10. Appendix B - page 7. It indicates that farms, homes,and business would be impacted by Segment 5a. I find that doubtful. There is no farming in that area. As described it is arid, barren and flat. Any impacts on existing land owners would be extremely minimal.

I hope these comments convey our concerns. In essence, this rail project has the ability to enhance the economic situation for the entire state - it isn't proposed to just enhance a particular corridor or benefit a specific shipper. Without a discussion of the importance and opportunities of the Moses Lake heavy-industrial areas on the economy of the whole state and how it affects the state's ability to compete for these large-scale employment opportunities, I am afraid that the report portrays a very negative and inaccurate economic conclusion.

Thank you for the opportunity to comment and thank you for your analysis.

Kim Foster
Corporate Counsel
ASPI Group, Inc.

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